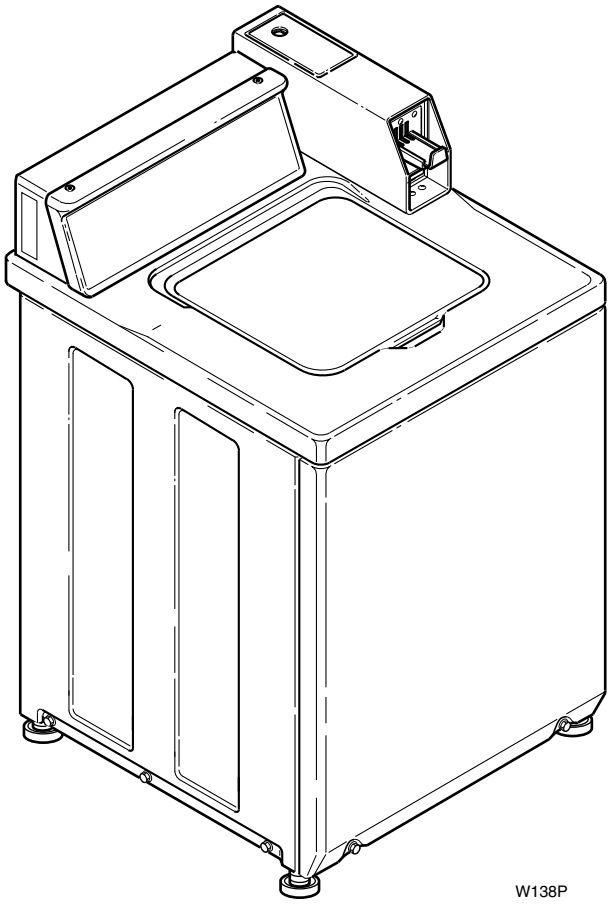
Automatic Washers

Refer to Page 6 for Model Numbers

Service



W138P

Alliance Laundry Systems

www.comlaundry.com

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Section 1
Safety Information

Throughout this manual and on machine decals, you will find precautionary statements ("CAUTION," "WARNING" and "DANGER") followed by specific instructions. These precautions are intended for the personal safety of the operator, user, servicer and those maintaining the machine.

⚠ DANGER

Danger indicates an imminently hazardous situation that, if not avoided, will cause severe personal injury or death.

⚠ WARNING

Warning indicates a hazardous situation that, if not avoided, could cause severe personal injury or death.

⚠ CAUTION

Caution indicates a hazardous situation that, if not avoided, may cause minor or moderate personal injury or property damage.

Additional precautionary statements ("IMPORTANT" and "NOTE") are followed by specific instructions.

IMPORTANT

The word "IMPORTANT" is used to inform the reader of specific procedures where minor machine damage will occur if the procedure is not followed.

NOTE

The word "NOTE" is used to communicate installation, operation, maintenance or servicing information that is important but not hazard related.

In the interest of safety, some general precautions relating to the operation of this machine follow.

WARNING

- **Failure to install, maintain and/or operate this product according to the manufacturer's instructions may result in conditions which can produce serious injury, death and/or property damage.**
- **Do not repair or replace any part of the product or attempt any servicing unless specifically recommended or published in this Service Manual and unless you understand and have the skills to carry out the servicing.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the product is properly grounded and to reduce the risk of fire, electric shock, serious injury or death.**

W006R2

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WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:

- **Disconnect electric power to the washer before servicing.**
- **Never start the washer with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.**

W003

WARNING

Repairs that are made to your products by unqualified persons can result in hazards due to improper assembly or adjustments subjecting you or the inexperienced person making such repairs to the risk of serious injury, electrical shock or death.

W007

WARNING

If you or an unqualified person perform service on your product, you must assume the responsibility for any personal injury or property damage which may result. The manufacturer will not be responsible for any injury or property damage arising from improper service and/or service procedures.

W008

NOTE: The WARNINGS and IMPORTANT INSTRUCTIONS appearing in this manual are not meant to cover all possible conditions and situations that may occur. Common sense, caution and care must be exercised when installing, maintaining or operating the washer.

Always contact your dealer, distributor, service agent or the manufacturer about any problems or conditions you do not understand.

Locating an Authorized Servicer

Alliance Laundry Systems is not responsible for personal injury or property damage resulting from improper service. Review all service information before beginning repairs.

Warranty service must be performed by an authorized technician, using authorized factory parts. If service is required after the warranty expires, Alliance Laundry Systems also recommends contacting an authorized technician and using authorized factory parts.

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Section 2
Introduction

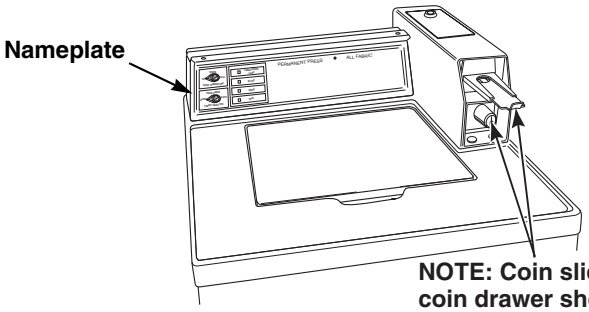
Customer Service

If literature or replacement parts are required, contact the source from whom the machine was purchased or contact Alliance Laundry Systems at (920) 748-3950 for the name and address of the nearest authorized parts distributor.

For technical assistance, call (920) 748-3121.

Nameplate Location

When calling or writing about your product, be sure to mention model and serial numbers. Model and serial numbers are located on nameplate(s) as shown.



NOTE: Coin slide and coin drawer shown for illustration purposes only. W233SE3A

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Model Identification

Information in this manual is applicable to these washer models.

Washer Model	Nonmetered Models	Metered Models	Computerized Audit Control	Electronic Display Control	Card Reader	One Speed Motor	Two Speed Motor	Porcelain Washtub	Stainless Steel Washtub
DWA021*A	X						X		X
EAJ920*A	X			X			X	X	
EAJ921*A	X			X			X		X
EA2011*A	X					X			X
EA2020*A	X						X	X	
EA2021*A	X						X		X
EA2110*A		X				X		X	
EA2111*A		X				X			X
EA2120*A		X					X	X	
EA2121*A		X					X		X
EA2210*A		X				X		X	
EA2220*A		X					X	X	
EA2221*A		X					X		X
EA2520*A		X					X	X	
EA2521*A		X					X		X
EA2610*A		X	X			X		X	
EA2620*A		X	X				X	X	
EA2621*A		X	X				X		X
EA2710*A		X	X			X		X	
EA2721*A		X	X				X		X
EA2820*A		X		X			X	X	
EA2821*A		X		X			X		X
EA2920*A		X		X			X	X	
EA2921*A		X		X			X		X
EA3820*A		X		X	X		X	X	
EA3821*A		X		X	X		X		X
EA3920*A		X		X	X		X	X	
EA3921*A		X		X	X		X		X
JA0110*		X				X		X	
ZA2020*A	X						X	X	
ZA2110*A		X				X		X	
ZA2120*A		X					X	X	
ZA3820*A		X		X	X		X	X	
ZA3821*A		X		X	X		X		X

*** Add suffix letter to model number to designate color. L – Almond W – White**

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Section 3
Troubleshooting

WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:
- **Disconnect electric power to the washer before servicing.**
- **Never start the washer with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.**

W003

IMPORTANT: Refer to appropriate model wiring diagram for aid in testing washer components.

1. NO HOT WATER

POSSIBLE CAUSE	TO CORRECT
Hot water supply faucet is closed.	• Open faucet.
Water supply is cold.	• Check water heater.
Kinked hot water inlet hose.	• Straighten or replace hose.
Clogged mixing valve screen, or clogged screen in outer end of inlet hose nearest water supply faucet.	• Disconnect hot water inlet hose, and clean or replace screen.
Inoperative hot water mixing valve solenoid.	• Test solenoid and replace if inoperative.
Inoperative timer.	• Test timer and replace if inoperative.
Inoperative temperature switch.	• Test switch and replace if inoperative.
Inoperative pressure switch.	• Test switch and replace if inoperative.
Clogged pressure hose.	• Remove and clean or replace hose.
Broken, loose or incorrect wiring.	• Refer to appropriate wiring diagram.

2. NO COLD WATER

POSSIBLE CAUSE	TO CORRECT
Cold water supply faucet is closed.	• Open faucet.
Kinked cold water inlet hose.	• Straighten or replace hose.
Clogged mixing valve screen, or clogged screen in outer end of inlet hose nearest water supply faucet.	• Disconnect cold water inlet hose, and clean or replace screen.
Inoperative cold water mixing valve solenoid.	• Test solenoid and replace if inoperative.
Inoperative timer.	• Test timer and replace if inoperative.
Inoperative temperature switch.	• Test switch and replace if inoperative.
Inoperative pressure switch.	• Test switch and replace if inoperative.
Clogged pressure hose.	• Remove and clean or replace hose.
Broken, loose or incorrect wiring.	• Refer to appropriate wiring diagram.

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WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:
- **Disconnect electric power to the washer before servicing.**
- **Never start the washer with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.**

W003

3. NO WARM WATER

POSSIBLE CAUSE	TO CORRECT
No hot water.	• Refer to *Paragraph 1*.
No cold water.	• Refer to *Paragraph 2*.

4. WATER FILL DOES NOT STOP AT PROPER LEVEL

POSSIBLE CAUSE	TO CORRECT
Inoperative pressure switch.	• Test switch and replace if inoperative.
Air leak in pressure hose.	• Replace hose.
Sediment on or under mixing valve diaphragm, defective diaphragm, or armature binding in armature guide.	• Disassemble and clean mixing valve. Replace if deteriorated or not easily cleaned.
Broken, weak or missing mixing valve armature spring.	• Disassemble valve and replace spring.
A siphoning action started in washer will cause water to be siphoned from washer during cycle due to end of drain hose being lower than cabinet top of washer. Drain hose fits tight in standpipe or drain.	• Install No. 562P3 Siphon Break Kit. Provide an air gap around drain hose and drain receptacle.
Water in pressure hose.	• Blow air through hose to remove water.
Broken, loose, shorted or incorrect wiring.	• Refer to appropriate wiring diagram.

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WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:
- **Disconnect electric power to the washer before servicing.**
- **Never start the washer with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.**

W003

5. TIMER DOES NOT ADVANCE (Mechanical Timer Models Only)

POSSIBLE CAUSE	TO CORRECT
Timer is designed to pause during fill periods.	• Allow completion of fill period.
Inoperative timer.	• Test timer, and replace if inoperative.
Loading door is open.	• Close loading door. Loading door MUST be closed any time the washer is set to fill, agitate or spin.
Washer will not fill.	• Timer pauses until pressure switch is satisfied.
Timer motor lead wire off timer terminal.	• Refer to appropriate wiring diagram and reattach wire.
Broken, loose or incorrect wiring.	• Refer to appropriate wiring diagram.
Timer is designed to pause when going from agitate to spin.	• Allow time for timer to go through that step. Refer to diagram for information on time required.
Timer is designed to stop if an out-of-balance load has been encountered while washing clothes load.	• Open lid and automatically reset out-of-balance switch when lid is closed.
Timer is designed to stop if washer drive motor has been over loaded and motor thermal overload has tripped.	• Motor thermal protector reset time may vary depending upon the reason for the washer overload, however, it should reset within 15 minutes. Check to ensure that washer was not overloaded with clothes.
Circuit breaker to washer may have tripped, disconnecting power to washer.	• Reset circuit breaker.
Washer will not fill.	• Timer is designed to pause when going from spin into rinse to allow the washtub to stop spinning before filling. Make sure that timer has advanced into fill portion of rinse cycle.

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WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:
- **Disconnect electric power to the washer before servicing.**
- **Never start the washer with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.**

W003

6. MOTOR DOES NOT RUN

POSSIBLE CAUSE	TO CORRECT
Electrical power off, fuse blown or power cord not plugged in.	• Check laundry room for blown or loose fuse(s) or open circuit breakers. (Washer itself does not have an electrical fuse).
Loading door not closed or inoperative switch.	• Close door or test switch and replace if inoperative.
Timer improperly set.	• Reset timer, or try another cycle.
Inoperative timer.	• Test timer and replace if inoperative.
Motor starting functions inoperative. No start; or motor hums only.	• Refer to *Section 7* to check start switch and start windings.
Motor is dead, won't run.	• Refer to *Section 7* to check switch and windings.
Motor overload protector has cycled.	• Wait two or three minutes for overload protector to reset. If protector cycles repeatedly, refer to *Paragraph 9*.
Bind in upper or lower motor bearing.	• Remove belt and determine if motor shaft will spin. Replace motor if shaft is locked up.
Broken, loose or incorrect wiring.	• Refer to appropriate wiring diagram.
Power cord is miswired.	• Refer to appropriate wiring diagram for correct wiring.

7. NO AGITATION

POSSIBLE CAUSE	TO CORRECT
Inoperative timer.	• Test timer and replace if inoperative.
Inoperative action switch.	• Test switch and replace if inoperative.
Motor will not run.	• Refer to *Section 7* to check switch and windings.
Inoperative pressure switch.	• Test switch and replace if inoperative.
Broken, loose or incorrect wiring.	• Refer to appropriate wiring diagram.
Broken drive belt.	• Replace belt.
Inoperative transmission assembly.	• Replace transmission assembly.
Sheared motor pulley roll pin.	• Remove drive motor and replace roll pin and any other damaged parts.
Drive motor overload protector has cycled.	• Refer to *Paragraph 9*.
Bind in pump.	• Replace pump.
Loading door is open or door switch is inoperative.	• Close door or test switch and replace if inoperative.

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WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:
- **Disconnect electric power to the washer before servicing.**
- **Never start the washer with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.**

W003

8. CONSTANT AGITATION

POSSIBLE CAUSE	TO CORRECT
Inoperative timer.	Test timer and replace if inoperative.
Shorted or incorrect wiring.	Refer to appropriate wiring diagram.
Inoperative transmission assembly.	Repair or replace transmission assembly.

9. WASHER SMOKES, OVERHEATS, CYCLES ON MOTOR THERMAL OVERLOAD PROTECTOR, SWITCH ACTUATOR KICKS IN AND OUT

POSSIBLE CAUSE	TO CORRECT
Belt is tacky and does not allow proper slip.	Check belt and replace if defective.
Belt tension is too great and does not allow proper slip.	Make sure idler spring is properly connected.
Inoperative timer.	Test timer and replace if inoperative.
Motor switch functions inoperative.	Refer to *Section 7* to check switch functions.
Bind in water pump.	Replace pump.
Brake pads or brake assembly binding.	Free binding pads, or replace pads and brake assembly.
Bearings, transmission or motor has locked up and will not turn.	Check that all these components are able to move freely. Correct binding component.
Incorrect voltage.	Contact local utility company, or have a qualified electrician check power supply.

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WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:
- **Disconnect electric power to the washer before servicing.**
- **Never start the washer with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.**

W003

10. SLOW SPIN OR NO SPIN

POSSIBLE CAUSE	TO CORRECT
Inoperative timer.	• Test timer and replace if inoperative.
Loading door is open or door safety switch is inoperative.	• Close loading door, or test switch and replace if inoperative.
Bind in water pump.	• Replace pump.
Broken or worn drive belt.	• Replace belt.
Motor will not run.	• Refer to "Motor Test" *Section 7* to check switch and windings.
Sheared motor pulley roll pin.	• Remove drive motor and appropriately replace roll pin and any other damaged parts.
Motor overload protector has cycled.	• Wait two or three minutes for overload protector to reset. If protector cycles repeatedly, refer to *Paragraph 9*.
No clearance between brake pads and discs.	• Replace pads and brake assembly.
Broken, loose or incorrect wiring.	• Refer to appropriate wiring diagram.
Inoperative transmission assembly.	• Repair or replace the transmission assembly.
Lack of idler spring tension.	• Adjust motor bracket. Refer to *Paragraph 62*.

11. CONSTANT SPIN

POSSIBLE CAUSE	TO CORRECT
Inoperative timer.	Test timer and replace if inoperative.
Washtub does not stop spinning within seven seconds after loading door is opened.	Replace brake pads and brake assembly.
Excessive wear on brake pads, or missing brake pads.	Replace brake pads and brake assembly.
Shorted or incorrect wiring.	Refer to appropriate wiring diagram.

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WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:
- **Disconnect electric power to the washer before servicing.**
- **Never start the washer with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.**

W003

12. WASHER STOPS IN CYCLE; QUITS AFTER A COUPLE LOADS; IS INTERMITTENT

POSSIBLE CAUSE	TO CORRECT
Belt is tacky and does not allow proper slip.	• Check belt and replace if defective.
Belt tension is too great and does not allow proper slip.	• Make sure idler spring is properly connected.
Inoperative timer.	• Test timer and replace if inoperative.
Broken, loose or incorrect wiring.	• Refer to appropriate wiring diagram.
Motor overload protector has cycled.	• Wait two or three minutes for overload protector to reset. If protector cycles repeatedly, refer to *Paragraph 9*.
Motor switch functions inoperative.	• Refer to *Section 7* to check switch functions.
Brake, transmission or motor has locked up and will not turn.	• Check that all these components are able to move freely.

13. WASHER IS LOCKED UP OR BINDING

POSSIBLE CAUSE	TO CORRECT
Excessive belt tension.	• Adjust belts.
Bind in upper or lower bearing.	• Replace bearing.
Bind in water pump.	• Replace pump.
Bind in transmission.	• Repair or replace transmission.
Brake pads binding.	• Free binding pads, or replace pads.
Incorrect voltage.	• Contact local utility company, or have a qualified electrician check power supply.

14. OUTER TUB DOES NOT EMPTY

POSSIBLE CAUSE	TO CORRECT
Kinked drain hose.	• Straighten hose.
Drain hose out of clamp in back of cabinet.	• Remove washer front panel and install drain hose into clamp.
Inoperative water pump.	• Replace pump.
Obstruction in outer tub outlet hose.	• Remove obstruction.

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WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:
- **Disconnect electric power to the washer before servicing.**
- **Never start the washer with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.**

W003

15. EXCESSIVE VIBRATION

POSSIBLE CAUSE	TO CORRECT
Unbalanced load in tub.	• Stop washer, redistribute load, then restart washer.
Broken, or disconnected centering spring(s).	• Connect or replace centering spring(s).
Washer is not properly leveled.	• Adjust leveling legs.
Washer is installed on weak, “spongy”, carpeted or built-up floor.	• Relocate washer, or support floor to eliminate weak or “spongy” condition.
Incorrect or loose cabinet screws.	• Replace with correct screws or tighten.
Base damaged (washer was dropped).	• Replace base assembly.
Balance ring not positioned properly on transmission assembly.	• Refer to *Paragraph 55*.

16. WATER LEAKING FROM OUTER TUB

POSSIBLE CAUSE	TO CORRECT
Leaking water seal in outer tub.	• Replace hub and seal kit assembly. Refer to *Paragraph 49*.
Hole in outer tub.	• Replace outer tub.
Pressure hose or pressure bulb leaking.	• Replace pressure hose and/or pressure bulb.
Outer tub cover gasket leaking.	• Replace gasket.
Obstruction in drain causing water to come over top of outer drain tub cover.	• Remove obstruction.
Tub-to-pump hose leaking at clamp.	• Tighten clamp.

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WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:
- **Disconnect electric power to the washer before servicing.**
- **Never start the washer with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.**

W003

17. TROUBLESHOOTING COIN DROP

When coin is placed into coin slot, the coin should roll down drop and be heard dropping into coin vault. If coin does not fall into coin vault or if coin drop sensor does not register that coin has been entered, follow troubleshooting instructions on the following page. Refer to *Figure 1* for path that coin follows when working properly.

IMPORTANT: Never use oil to correct coin drop problems. Oil residue will prevent coins from rolling properly.

IMPORTANT: Do not bend or damage mechanical parts within coin drop.

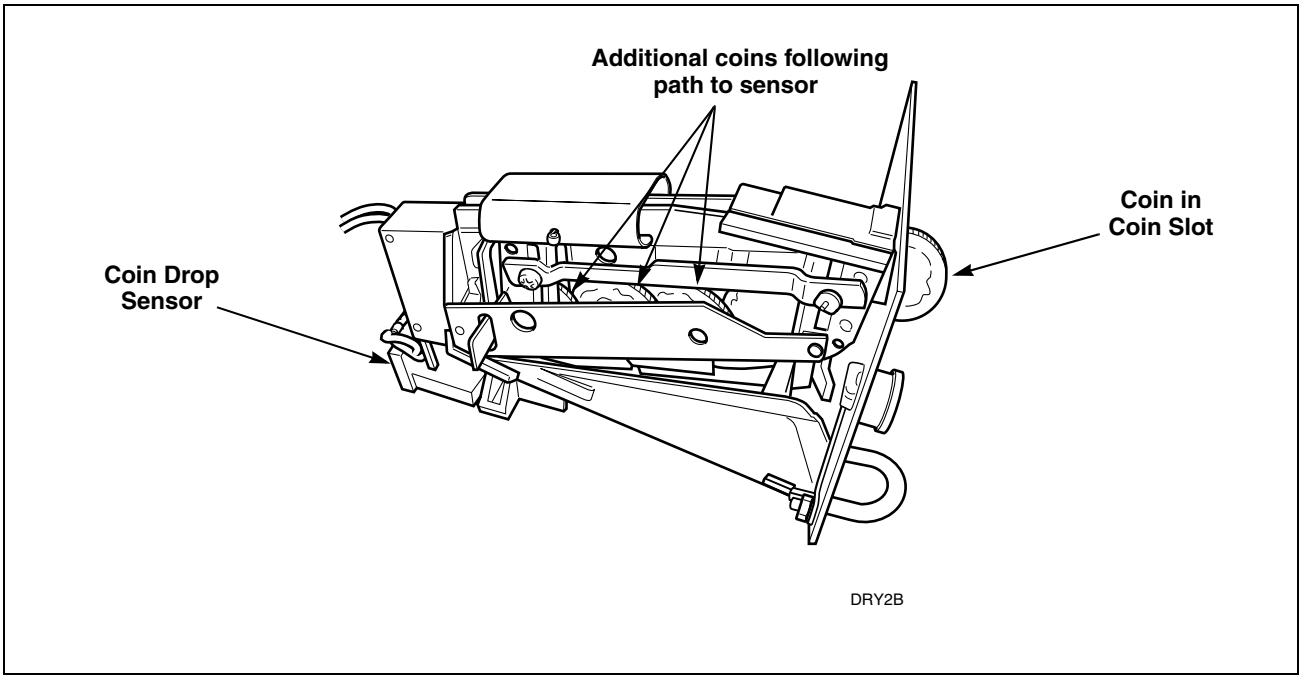

Figure 1

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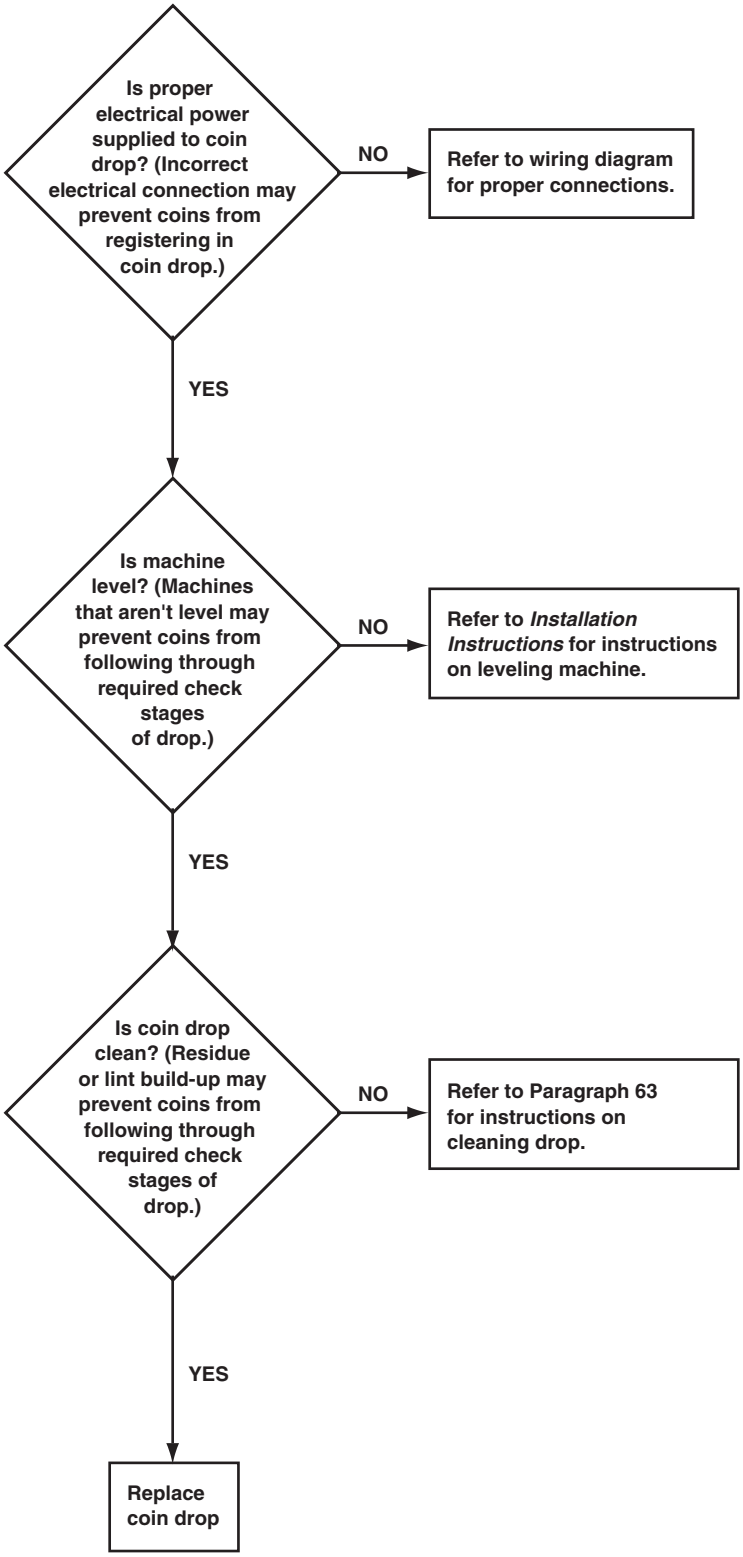
TROUBLESHOOTING COIN DROP


Is proper electrical power supplied to coin drop? (Incorrect electrical connection may prevent coins from registering in coin drop.)
NO
Refer to wiring diagram for proper connections.
YES
Is machine level? (Machines that aren't level may prevent coins from following through required check stages of drop.)
NO
Refer to *Installation Instructions* for instructions on leveling machine.
YES
Is coin drop clean? (Residue or lint build-up may prevent coins from following through required check stages of drop.)
NO
Refer to Paragraph 63 for instructions on cleaning drop.
YES
Replace coin drop

TLW305S

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Troubleshooting

Electronic Control Models

WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:
- **Disconnect electric power to the washer before servicing.**
- **Never start the washer with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.**

W003

18. ERROR CODE LISTING

E:00	General Error	
E:01	Proximity Error	Micro-wand IIIe is improperly aimed at infrared communicator (angle or distance): Re-aim Micro-wand IIIe.
E:02	IR Communications Disconnection	Micro-wand IIIe prematurely pulled away from electronic control during infrared communication: Maintain infrared connection between Micro-wand IIIe and electronic control during communication.
E:05	Invalid Value Communication	Invalid code downloaded from Micro-wand IIIe to electronic control.
E:07	Inoperative Control	Replace electronic control.
E:08	Inoperative Control	Replace electronic control.
E:09	Proximity Error	Micro-wand IIIe is improperly aimed at infrared communicator (angle or distance): Re-aim Micro-wand IIIe.
E:0A	Proximity Error	Micro-wand IIIe is improperly aimed at infrared communicator (angle or distance): Re-aim Micro-wand IIIe.
E:0B	IR Communication Disconnection	Micro-wand IIIe prematurely pulled away from electronic control during infrared communication: Maintain infrared connection between Micro-wand IIIe and electronic control during communication.
E:0C	IR Communication Disconnection	Micro-wand IIIe prematurely pulled away from electronic control during infrared communication: Maintain infrared connection between Micro-wand IIIe and electronic control during communication.
E:0d	Pressure Switch Error	1. Check fill and drain hoses for improper installation and kinks. 2. Check fill electrical circuit: Replace inoperative switches or wires.
E:0F	IR Communicator Programmed Off	Reprogram infrared communicator on.
Err	Coin Error	1. Inoperative coin sensor: Run the Coin Drop Diagnostic test. 2. Coin drop obstruction: Check coin drop area and remove any obstructions. 3. Customer tampering: Evaluate security procedures.

NOTE: Disconnecting power to the unit may clear the error display.

NOTE: If replacing an inoperative electronic control due to burnt pin(s) on the 6-pin wire harness connector block, it may be due to damaged terminals in the harness connector. Replace the control wire harness with the control to avoid repeated damage.

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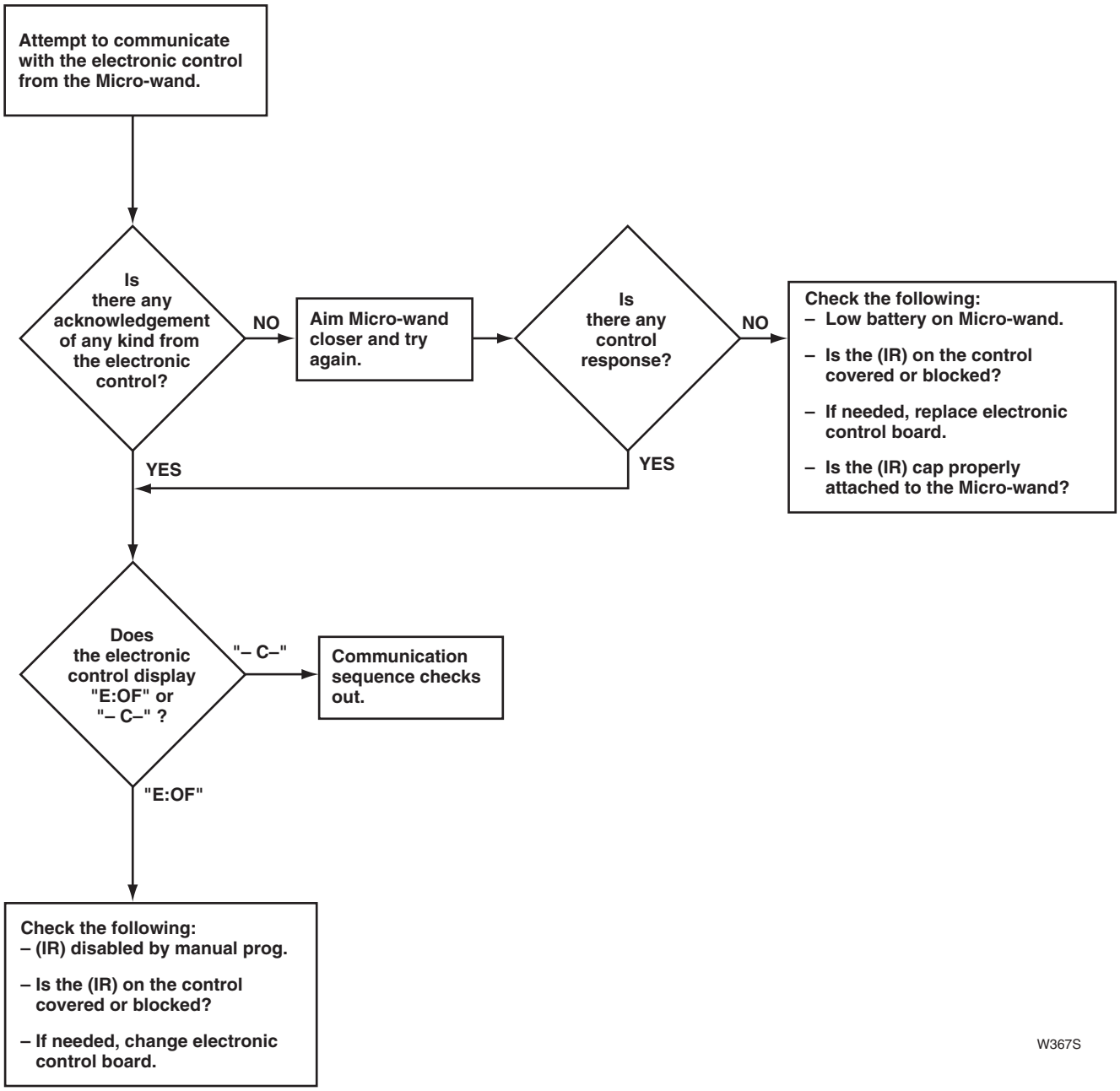
19. CANNOT PERFORM INFRARED COMMUNICATION


Attempt to communicate with the electronic control from the Micro-wand.
Is there any acknowledgement of any kind from the electronic control?
NO
Aim Micro-wand closer and try again.
Is there any control response?
NO
Check the following:
– Low battery on Micro-wand.
– Is the (IR) on the control covered or blocked?
– If needed, replace electronic control board.
– Is the (IR) cap properly attached to the Micro-wand?
YES
YES
Does the electronic control display "E:OF" or "– C–" ?
"– C–"
Communication sequence checks out.
"E:OF"
Check the following:
– (IR) disabled by manual prog.
– Is the (IR) on the control covered or blocked?
– If needed, change electronic control board.
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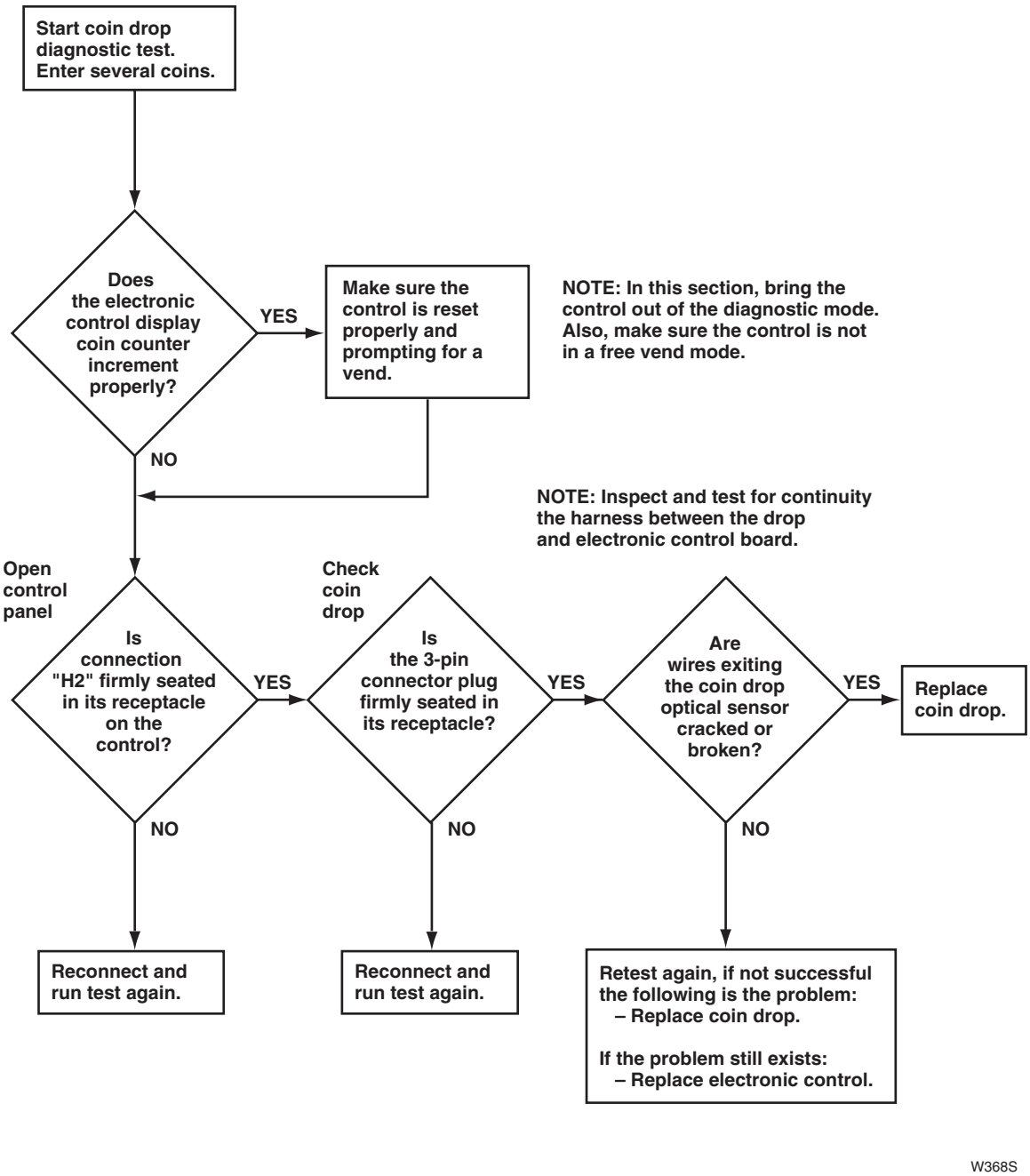
20. COINS IGNORED WHEN ENTERED

NOTE: For instructions on performing tests, refer to programming manual.


Start coin drop diagnostic test. Enter several coins.
Does the electronic control display coin counter increment properly?
YES
Make sure the control is reset properly and prompting for a vend.
NOTE: In this section, bring the control out of the diagnostic mode. Also, make sure the control is not in a free vend mode.
NO
NOTE: Inspect and test for continuity the harness between the drop and electronic control board.
Open control panel
Is connection "H2" firmly seated in its receptacle on the control?
YES
Check coin drop
Is the 3-pin connector plug firmly seated in its receptacle?
YES
Are wires exiting the coin drop optical sensor cracked or broken?
YES
Replace coin drop.
NO
Reconnect and run test again.
NO
Reconnect and run test again.
NO
Retest again, if not successful the following is the problem:
– Replace coin drop.
If the problem still exists:
– Replace electronic control.

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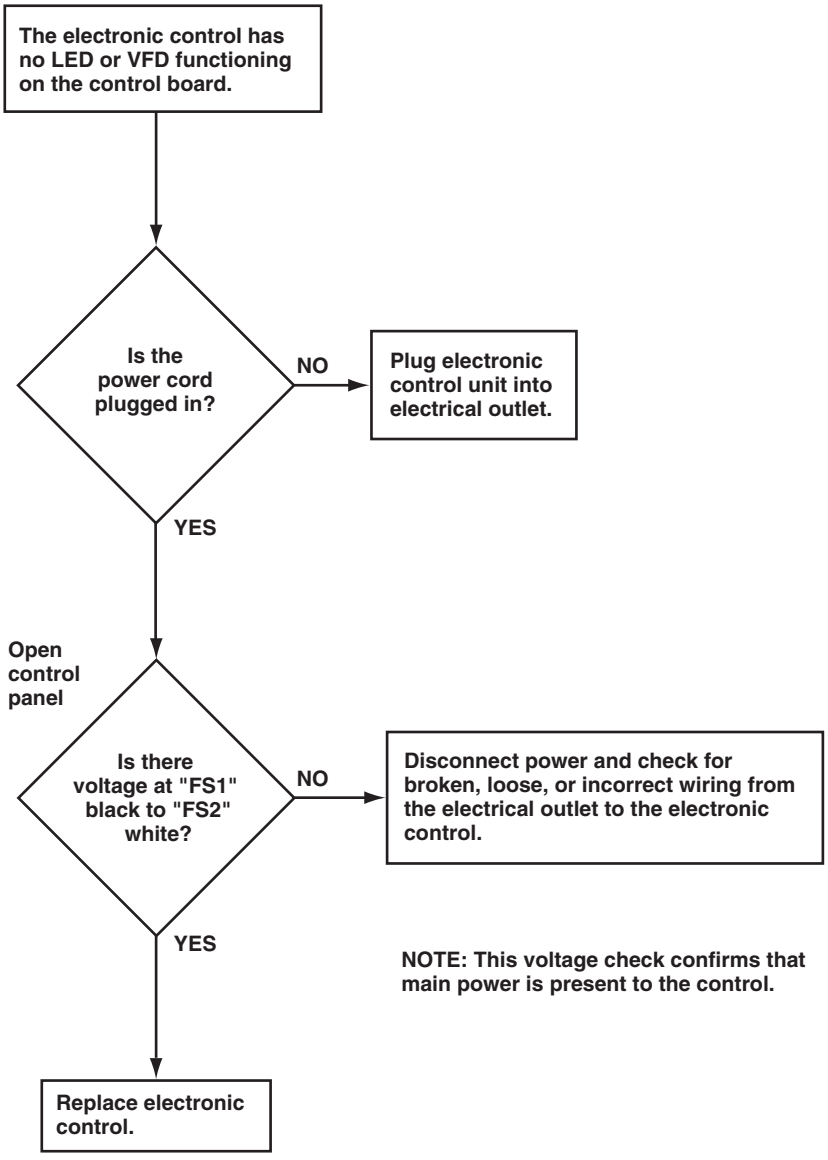
21. ELECTRONIC CONTROL HAS NO VISIBLE DISPLAY


The electronic control has no LED or VFD functioning on the control board.
Is the power cord plugged in?
NO
Plug electronic control unit into electrical outlet.
YES
Open control panel
Is there voltage at "FS1" black to "FS2" white?
NO
Disconnect power and check for broken, loose, or incorrect wiring from the electrical outlet to the electronic control.
YES
NOTE: This voltage check confirms that main power is present to the control.
Replace electronic control.
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Notes

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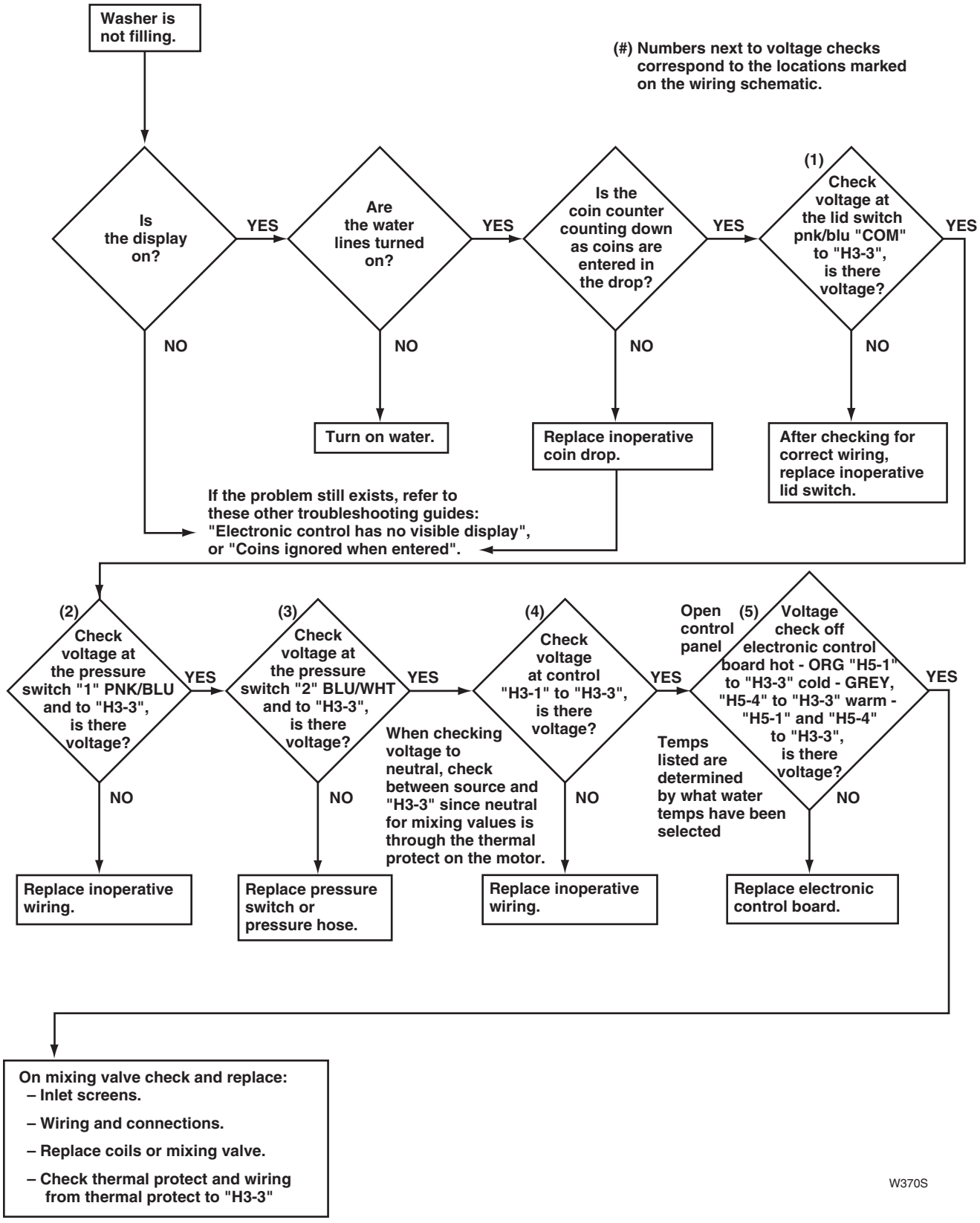
22. NO FILL ANALYSIS


Washer is not filling.
(#) Numbers next to voltage checks correspond to the locations marked on the wiring schematic.
Is the display on?
YES
Are the water lines turned on?
YES
Is the coin counter counting down as coins are entered in the drop?
YES
(1) Check voltage at the lid switch pnk/blu "COM" to "H3-3", is there voltage?
YES
NO
NO
NO
NO
Turn on water.
Replace inoperative coin drop.
After checking for correct wiring, replace inoperative lid switch.
If the problem still exists, refer to these other troubleshooting guides: "Electronic control has no visible display", or "Coins ignored when entered".
(2) Check voltage at the pressure switch "1" PNK/BLU and to "H3-3", is there voltage?
YES
(3) Check voltage at the pressure switch "2" BLU/WHT and to "H3-3", is there voltage?
YES
(4) Check voltage at control "H3-1" to "H3-3", is there voltage?
YES
Open control panel
(5) Voltage check off electronic control board hot - ORG "H5-1" to "H3-3" cold - GREY, "H5-4" to "H3-3" warm - "H5-1" and "H5-4" to "H3-3", is there voltage?
YES
NO
NO
NO
NO
When checking voltage to neutral, check between source and "H3-3" since neutral for mixing values is through the thermal protect on the motor.
Temps listed are determined by what water temps have been selected
Replace inoperative wiring.
Replace pressure switch or pressure hose.
Replace inoperative wiring.
Replace electronic control board.
On mixing valve check and replace:
– Inlet screens.
– Wiring and connections.
– Replace coils or mixing valve.
– Check thermal protect and wiring from thermal protect to "H3-3"
W370S

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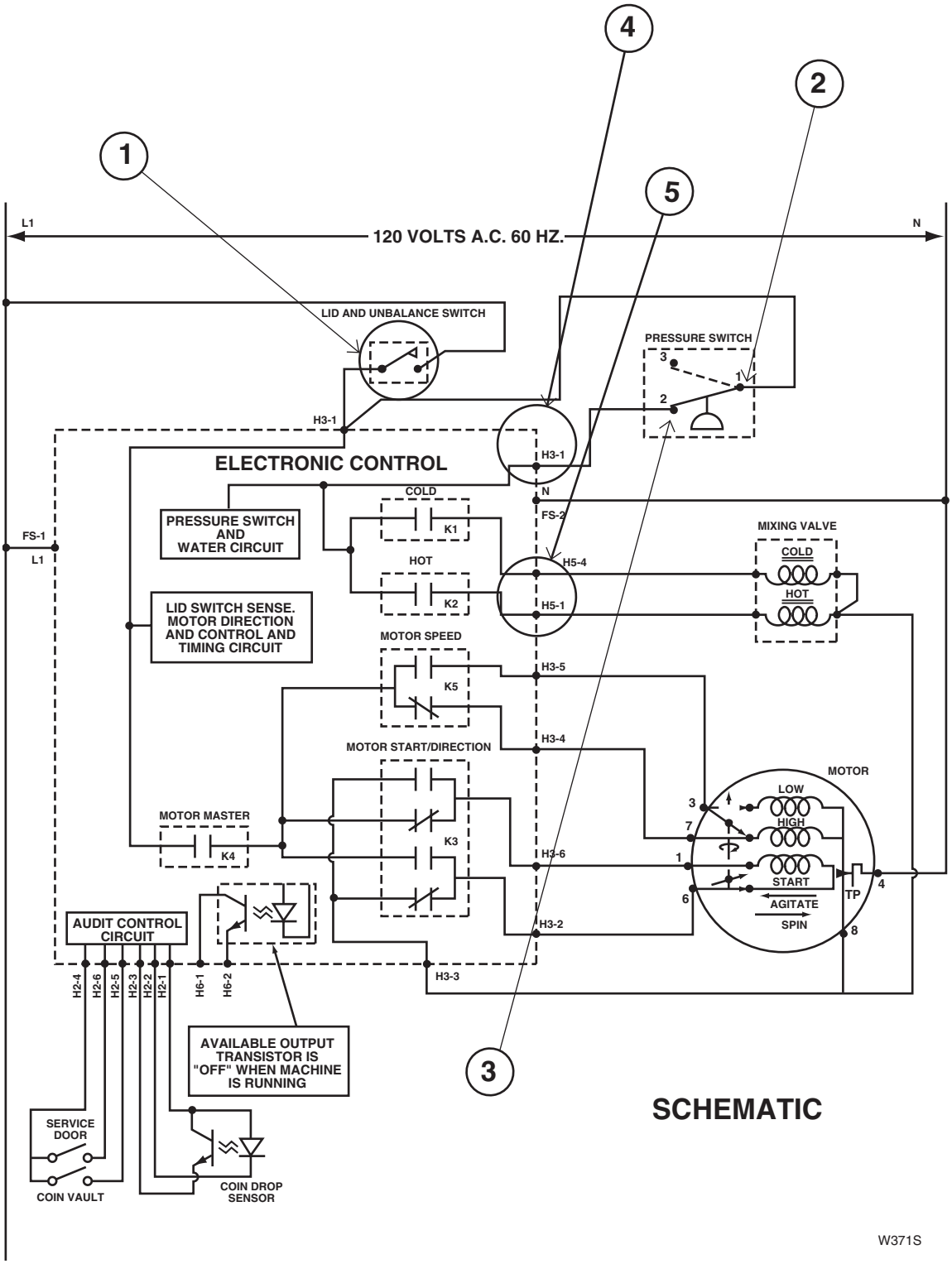
NO FILL ANALYSIS



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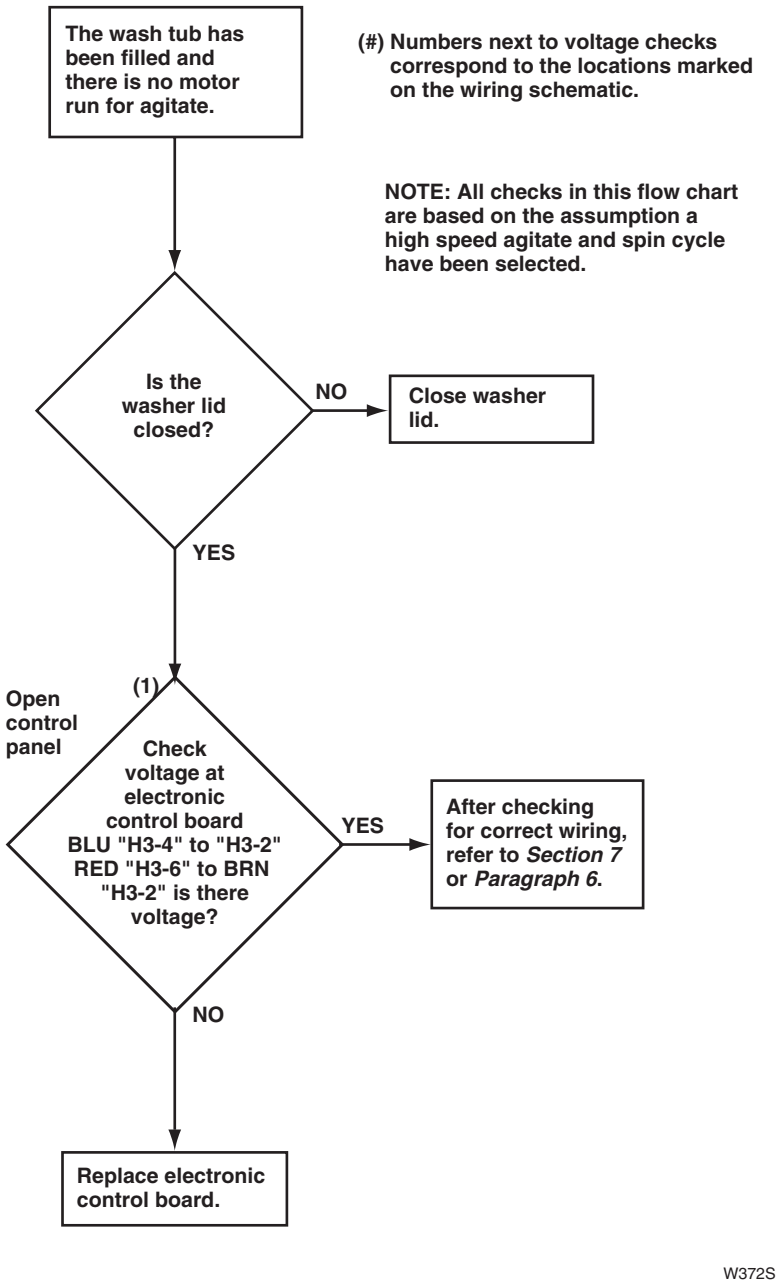
23. NO MOTOR RUN — AGITATE ANALYSIS


The wash tub has been filled and there is no motor run for agitate.
(#) Numbers next to voltage checks correspond to the locations marked on the wiring schematic.
NOTE: All checks in this flow chart are based on the assumption a high speed agitate and spin cycle have been selected.
Is the washer lid closed?
NO
Close washer lid.
YES
(1)
Open control panel
Check voltage at electronic control board BLU "H3-4" to "H3-2" RED "H3-6" to BRN "H3-2" is there voltage?
YES
After checking for correct wiring, refer to Section 7 or Paragraph 6.
NO
Replace electronic control board.
W372S

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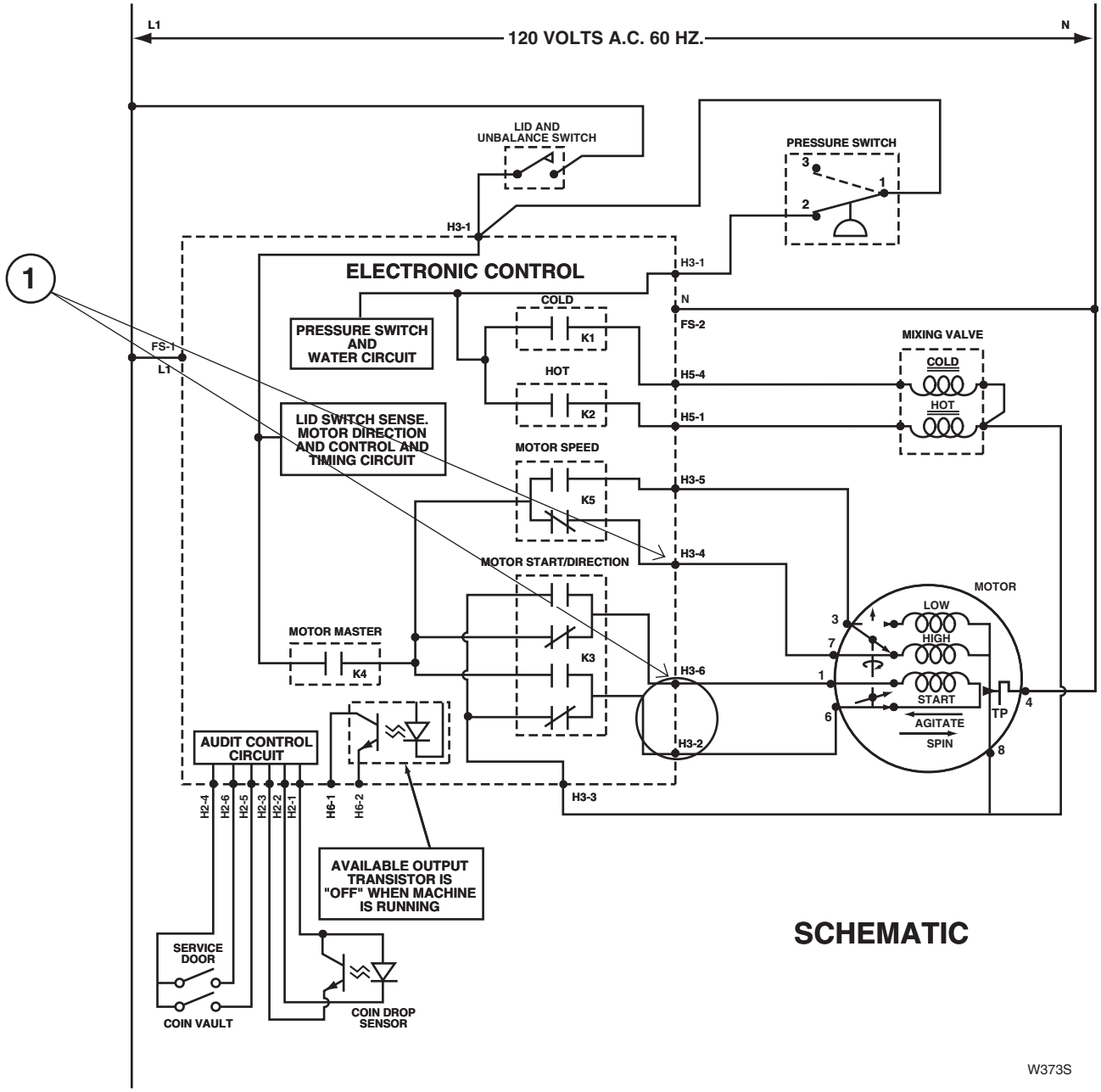
NO MOTOR RUN — AGITATE ANALYSIS



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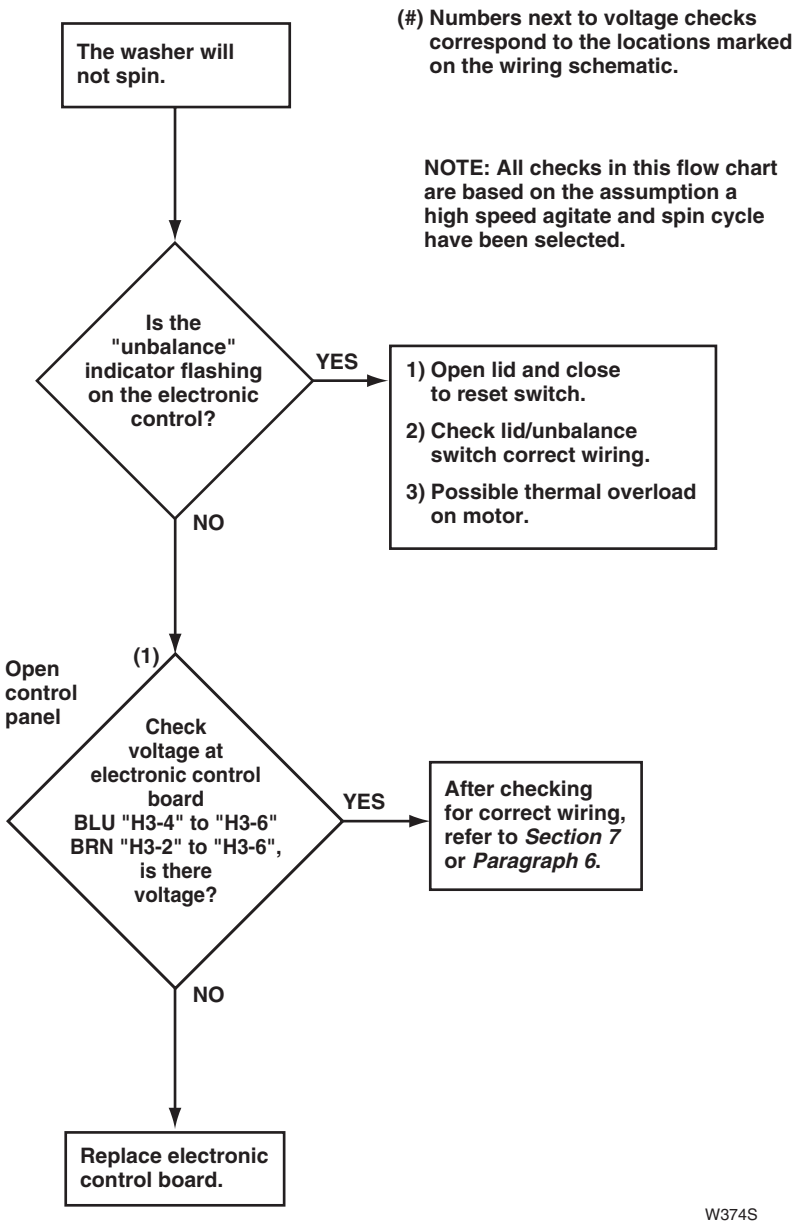
24. NO MOTOR RUN — SPIN ANALYSIS


(#) Numbers next to voltage checks correspond to the locations marked on the wiring schematic.
The washer will not spin.
NOTE: All checks in this flow chart are based on the assumption a high speed agitate and spin cycle have been selected.
Is the "unbalance" indicator flashing on the electronic control?
YES
1) Open lid and close to reset switch.
2) Check lid/unbalance switch correct wiring.
3) Possible thermal overload on motor.
NO
(1)
Open control panel
Check voltage at electronic control board BLU "H3-4" to "H3-6" BRN "H3-2" to "H3-6", is there voltage?
YES
After checking for correct wiring, refer to *Section 7* or *Paragraph 6*.
NO
Replace electronic control board.
W374S

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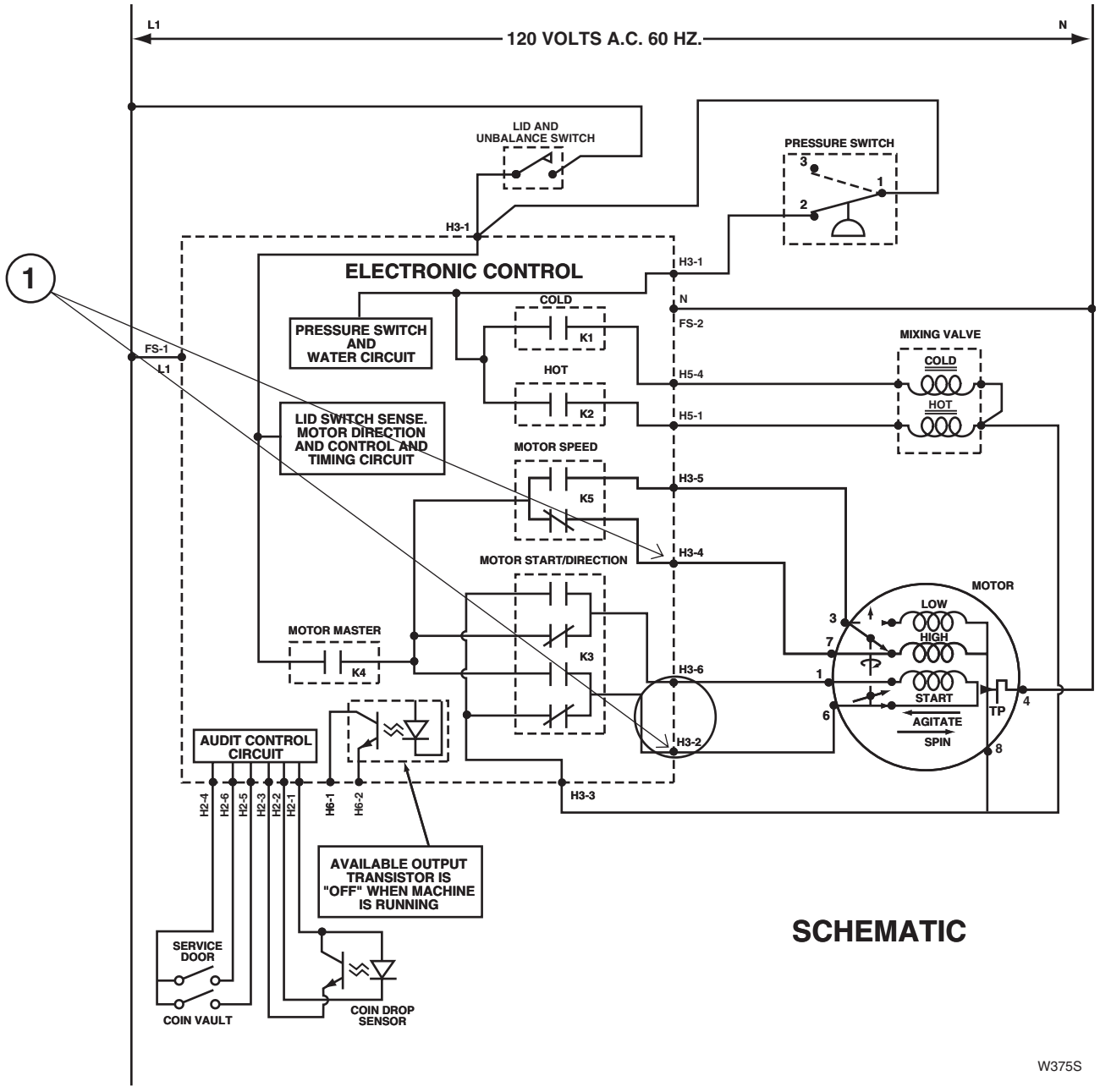
NO MOTOR RUN — SPIN ANALYSIS



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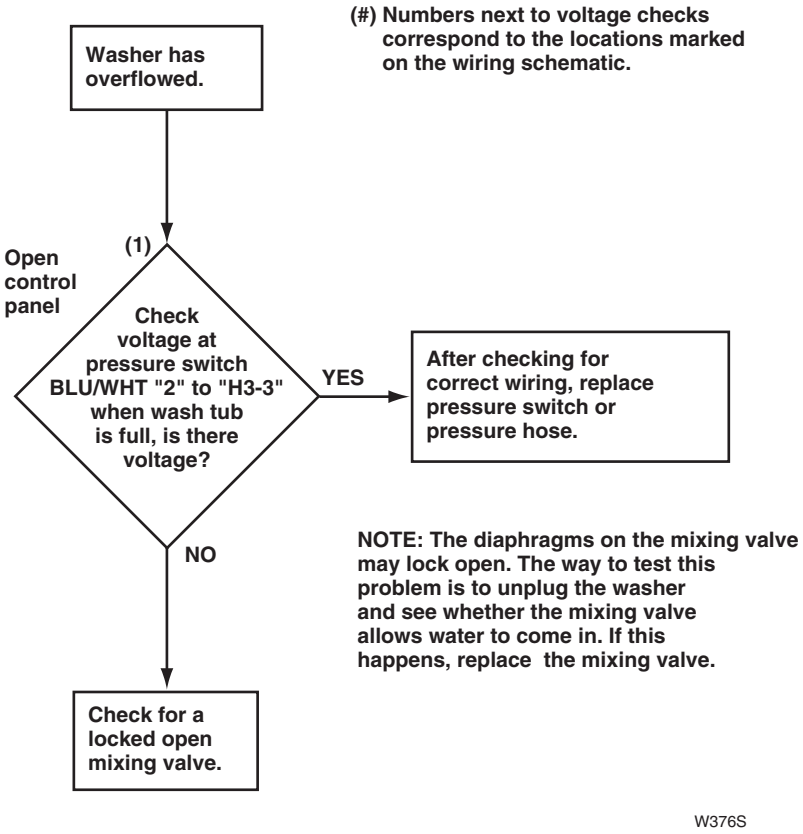
25. OVERFLOW ANALYSIS


(#) Numbers next to voltage checks correspond to the locations marked on the wiring schematic.
Washer has overflowed.
(1)
Open control panel
Check voltage at pressure switch BLU/WHT "2" to "H3-3" when wash tub is full, is there voltage?
YES
After checking for correct wiring, replace pressure switch or pressure hose.
NO
NOTE: The diaphragms on the mixing valve may lock open. The way to test this problem is to unplug the washer and see whether the mixing valve allows water to come in. If this happens, replace the mixing valve.
Check for a locked open mixing valve.
W376S

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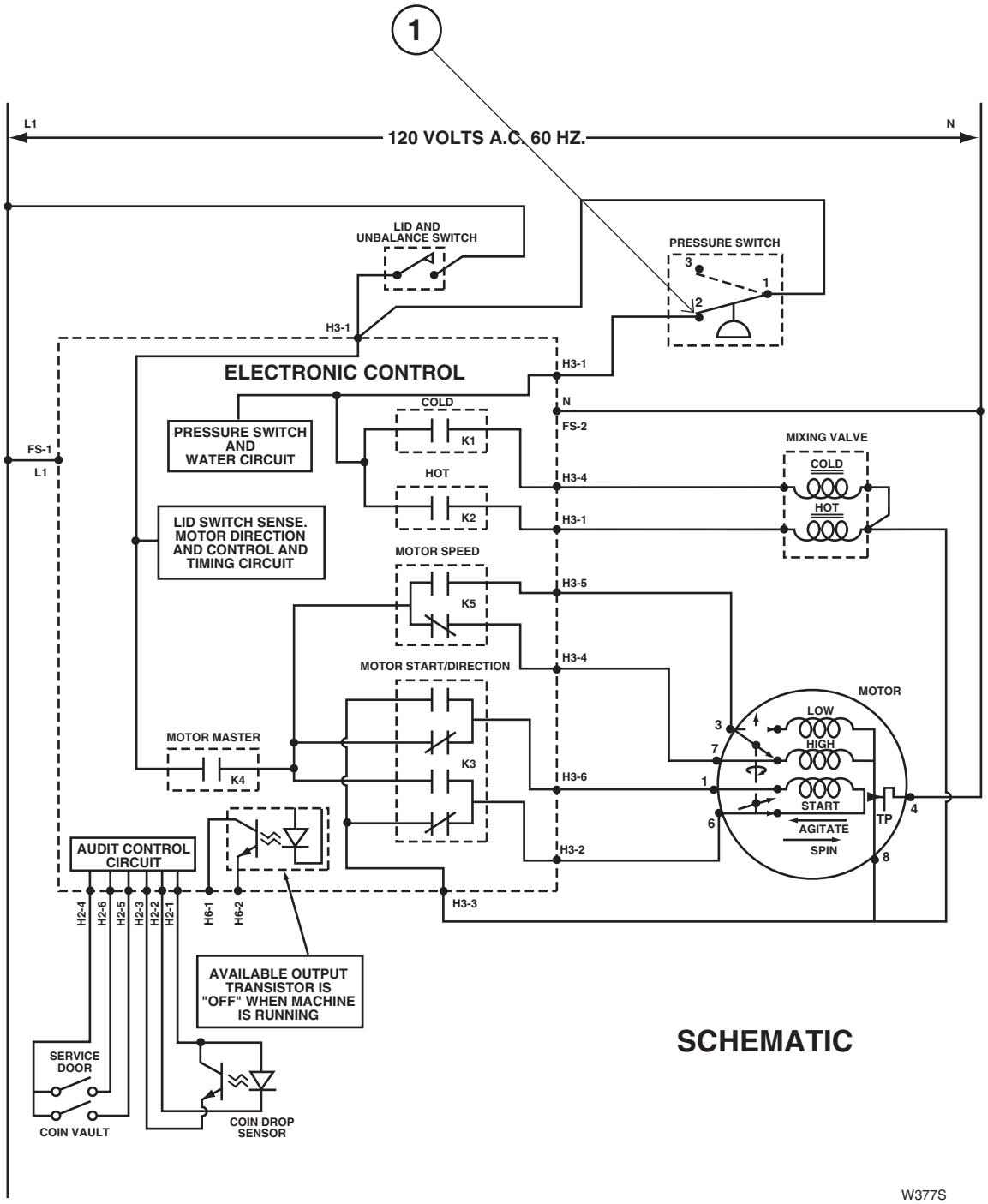
OVERFLOW ANALYSIS



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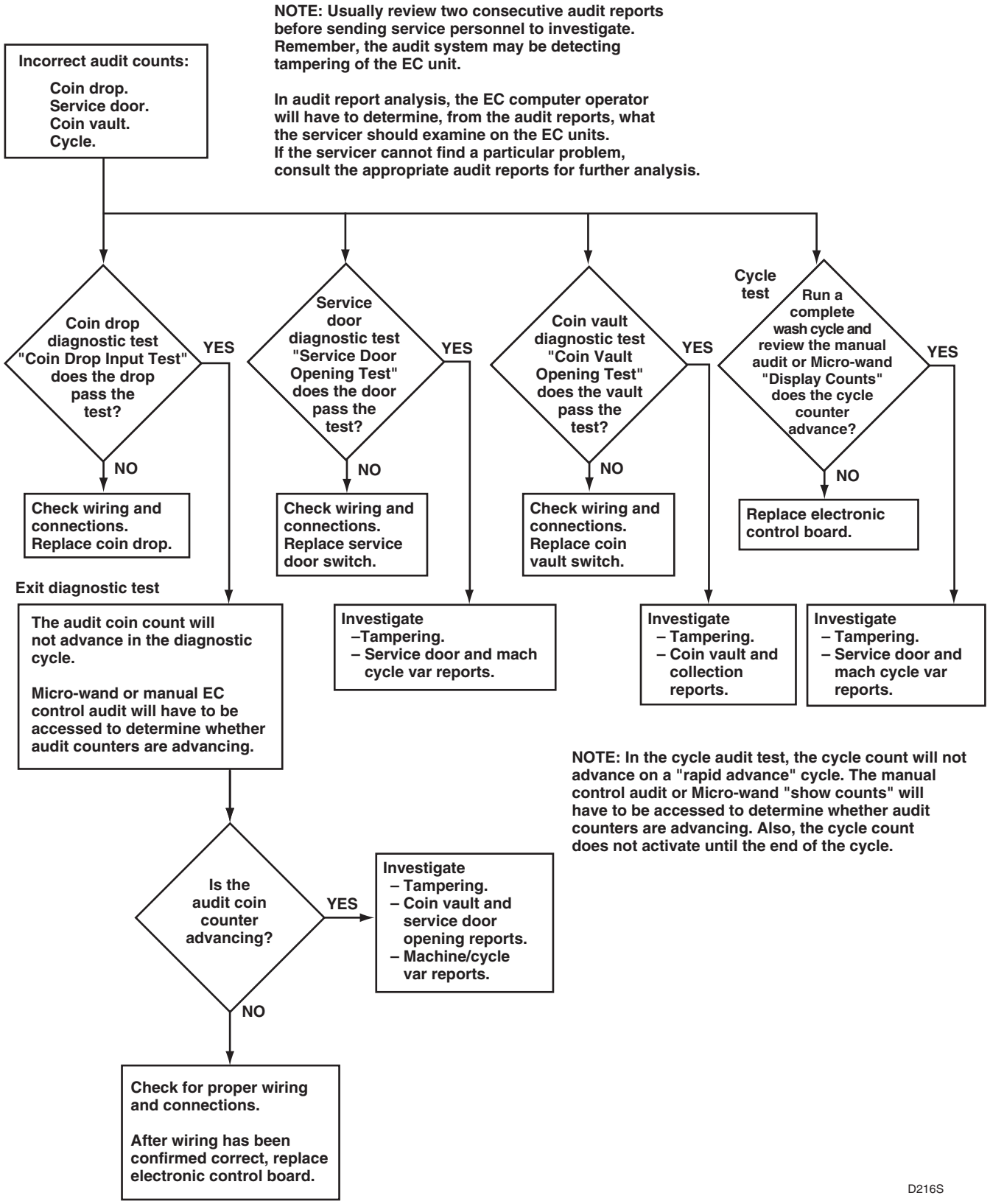
26. AUDIT SWITCH FUNCTION ANALYSIS

NOTE: For instructions on performing tests, refer to programming manual.


NOTE: Usually review two consecutive audit reports before sending service personnel to investigate. Remember, the audit system may be detecting tampering of the EC unit.
In audit report analysis, the EC computer operator will have to determine, from the audit reports, what the servicer should examine on the EC units. If the servicer cannot find a particular problem, consult the appropriate audit reports for further analysis.
Incorrect audit counts:
Coin drop.
Service door.
Coin vault.
Cycle.
Coin drop diagnostic test "Coin Drop Input Test" does the drop pass the test?
YES
NO
Check wiring and connections. Replace coin drop.
Service door diagnostic test "Service Door Opening Test" does the door pass the test?
YES
NO
Check wiring and connections. Replace service door switch.
Coin vault diagnostic test "Coin Vault Opening Test" does the vault pass the test?
YES
NO
Check wiring and connections. Replace coin vault switch.
Cycle test
Run a complete wash cycle and review the manual audit or Micro-wand "Display Counts" does the cycle counter advance?
YES
NO
Replace electronic control board.
Exit diagnostic test
The audit coin count will not advance in the diagnostic cycle.
Micro-wand or manual EC control audit will have to be accessed to determine whether audit counters are advancing.
Investigate
–Tampering.
– Service door and mach cycle var reports.
Investigate
– Tampering.
– Coin vault and collection reports.
Investigate
– Tampering.
– Service door and mach cycle var reports.
NOTE: In the cycle audit test, the cycle count will not advance on a "rapid advance" cycle. The manual control audit or Micro-wand "show counts" will have to be accessed to determine whether audit counters are advancing. Also, the cycle count does not activate until the end of the cycle.
Is the audit coin counter advancing?
YES
Investigate
– Tampering.
– Coin vault and service door opening reports.
– Machine/cycle var reports.
NO
Check for proper wiring and connections.
After wiring has been confirmed correct, replace electronic control board.
D216S

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Section 4
Grounding

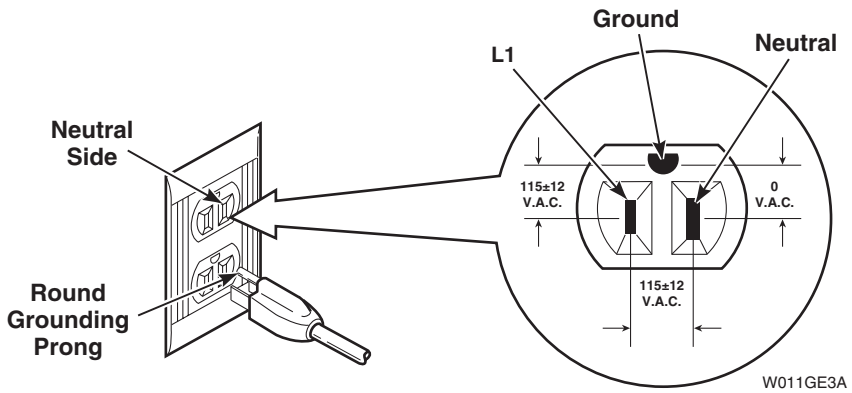
WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:
- **Disconnect electric power to the washer before servicing.**
- **Never start the washer with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.**

W003

27. WALL RECEPTACLE POLARITY CHECK

Refer to *Figure 2*.



NOTE: Have a qualified electrician check polarity of wall receptacle. If a voltage reading is measured other than that illustrated, the qualified electrician should correct the problem.

Figure 2

28. POWER CORD TO CONTROL HOOD, CONTROL HOOD TO THE CONTROL PANEL FRAME

Refer to *Figure 3*.

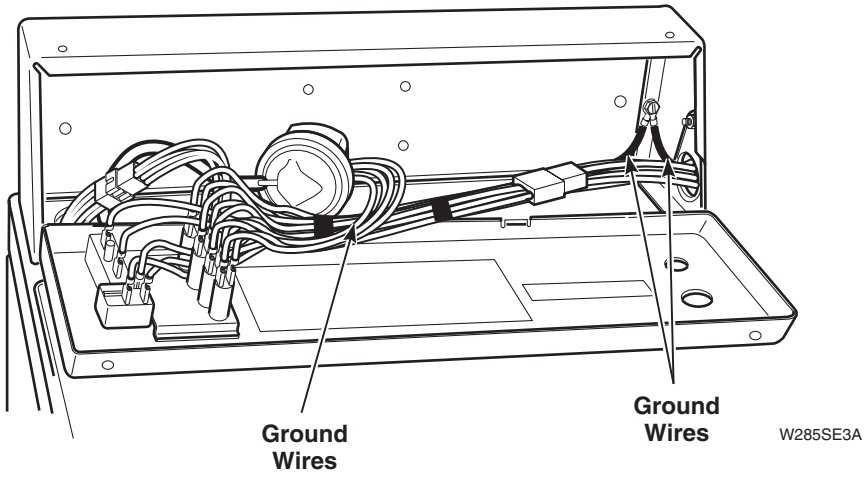


Figure 3

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WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:
- **Disconnect electric power to the washer before servicing.**
- **Never start the washer with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.**

W003

29. CONTROL HOOD WIRE HARNESS TO TOP LEFT REAR CORNER GUSSET OF CABINET

Refer to *Figure 4*.

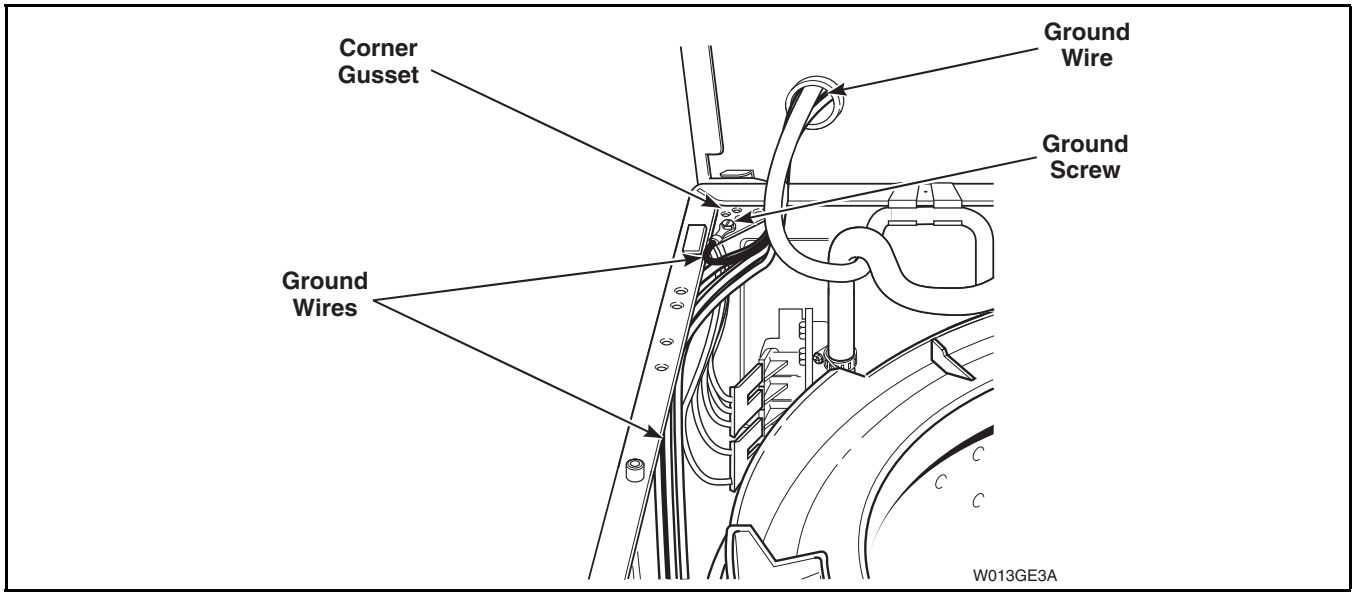

Figure 4

30. WIRE HARNESS TO MOTOR

Refer to *Figure 5*.

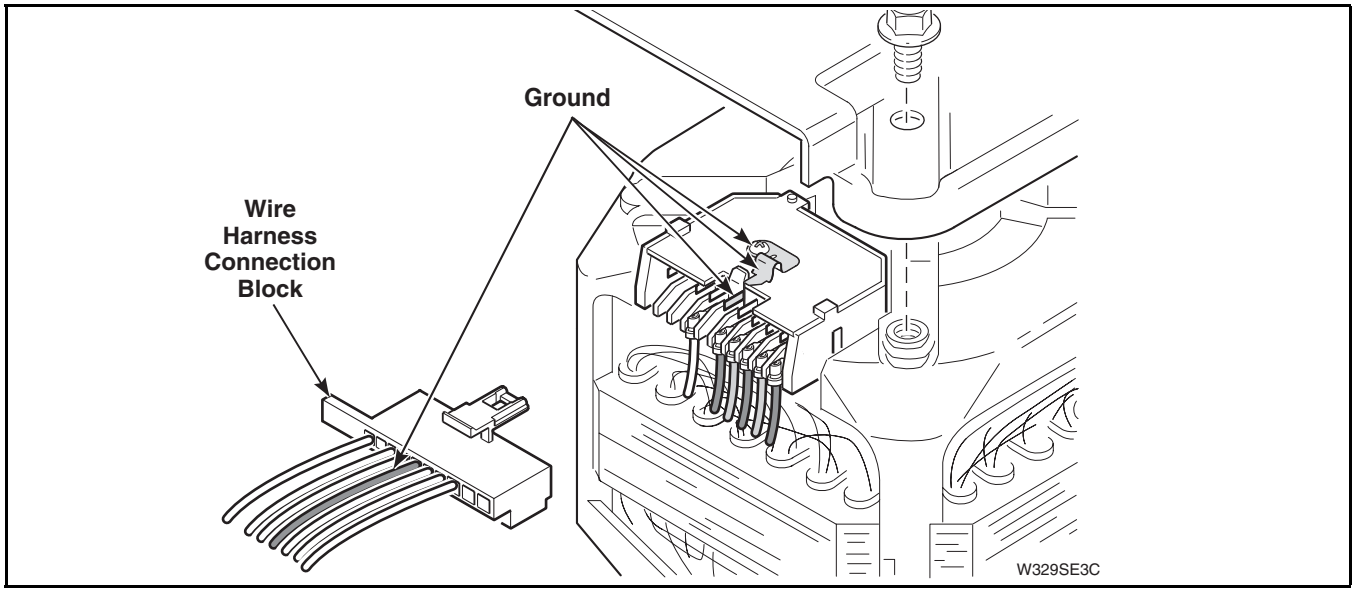

Figure 5

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Section 5
Service Procedures

WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:
- **Disconnect electric power to the washer before servicing.**
- **Never start the washer with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.**

W003

IMPORTANT: When reference is made to directions (right or left) in this manual, it is from the operator's position facing the front of the washer.

31. CONTROL PANEL ASSEMBLY

a. Control Panel:

(1) Remove two control panel attaching screws and lay assembly forward on a protective pad on cabinet top. Refer to *Figure 6*.

(2) Unplug wire harness quick disconnect blocks, two ground wires and leads from pressure switch and loading door switch. Refer to *Figure 7*.

NOTE: Refer to appropriate wiring diagram when reconnecting wire harnesses, ground and switch leads.

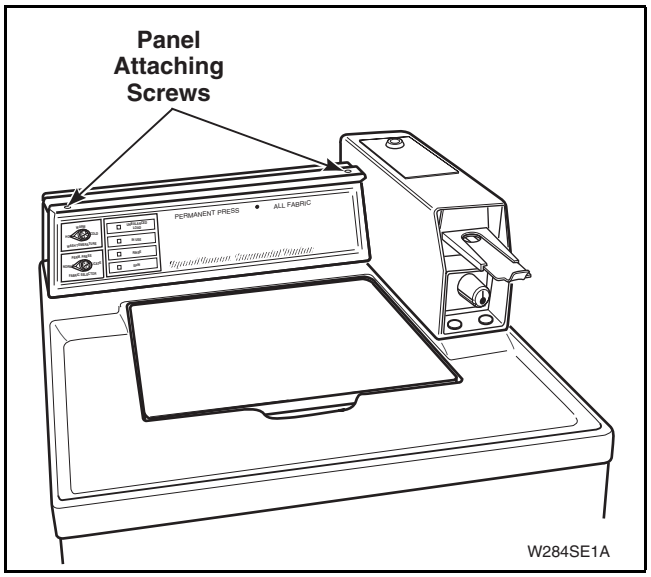

Figure 6

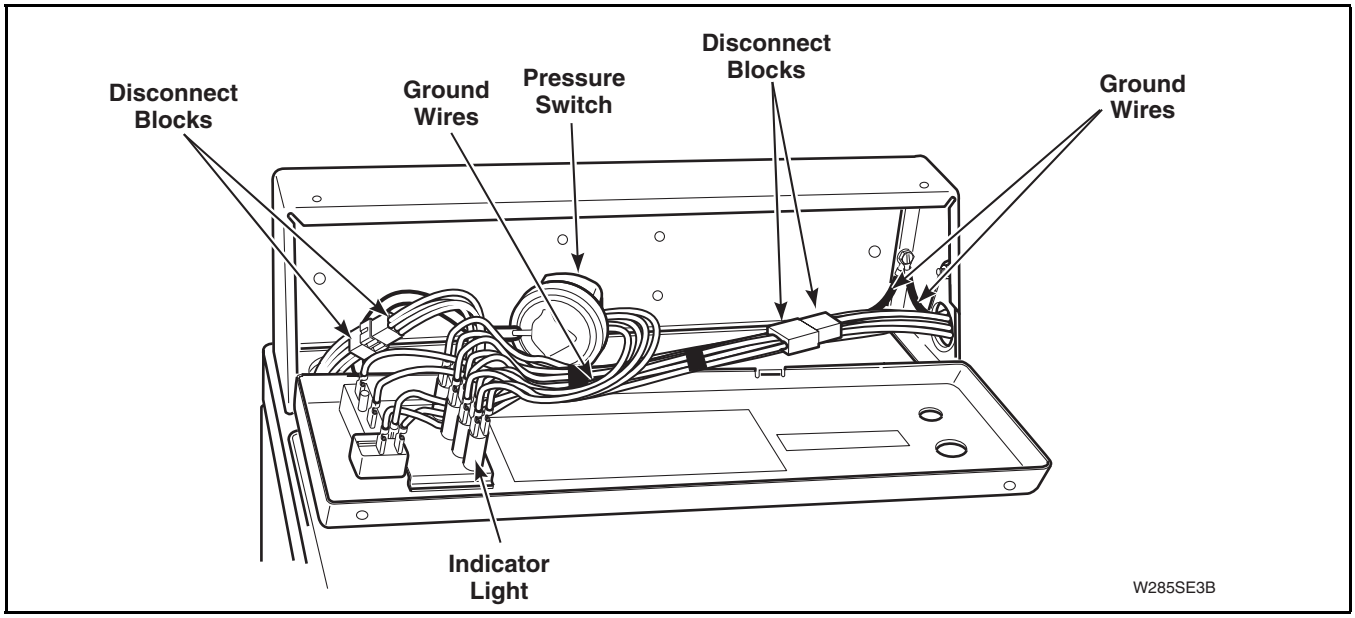

Figure 7

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WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:
- **Disconnect electric power to the washer before servicing.**
- **Never start the washer with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.**

W003

b. **Cycle Selector or Wash Temperature Switch:**
   (1) Remove two control panel attaching screws and lay assembly forward on protective pad on cabinet top.
   (2) Loosen setscrew holding switch knob to switch shaft. Refer to *Figure 8*.
   (3) Remove knurled nut holding switch to control panel. Refer to *Figure 8*.

NOTE: Lockwasher must be between switch and control panel when installing switch. Refer to *Figure 8*.

   (4) Disconnect wires from switch.

NOTE: Refer to appropriate wiring diagram when rewiring switch.

c. **Indicator Lights - (Unbalanced Load, In Use, Rinse or Spin.) Refer to *Figure 7*:**
   (1) Remove two control panel attaching screws and lay assembly forward on protective pad on cabinet top.
   (2) Disconnect wires from light.

NOTE: Refer to wiring diagram when rewiring light.

   (3) Squeeze locking tabs together and pull light out rear of control panel.

d. **Pressure Switch**
   Refer to *Figure 7*.
   (1) Remove two control panel attaching screws and lay assembly forward on protective pad on cabinet top.
   (2) Remove two screws holding switch to cabinet top.
   (3) Pull switch out of control hood far enough to disconnect pressure hose and wires from switch.

NOTE: Refer to appropriate wiring diagram when rewiring pressure switch.

IMPORTANT: When installing pressure switch, blow air into hose before connecting hose to switch to remove any moisture that may have accumulated

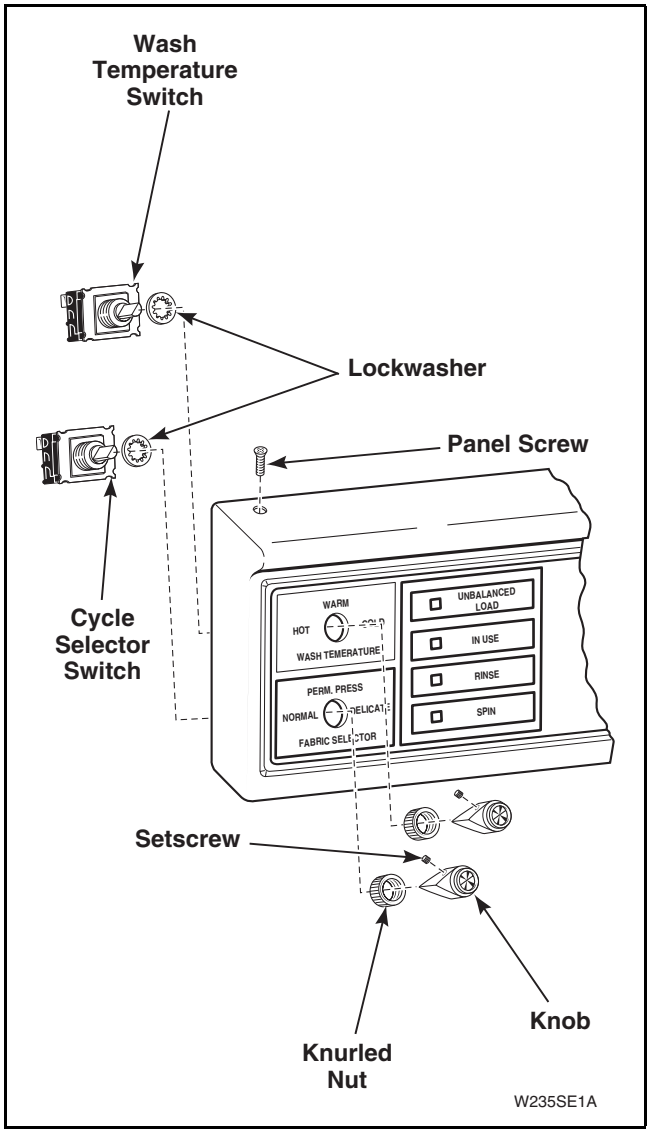

Figure 8

e. **Electronic Control**

NOTE: When replacing an inoperative electronic control due to burnt pin(s) on the 6-pin wire harness connector block, it may be due to damaged terminals in the harness connector. Replace the control wire harness with the control to avoid repeated damage.

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WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:
- **Disconnect electric power to the washer before servicing.**
- **Never start the washer with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.**

W003

IMPORTANT: Due to the sensitivity of the electronic control, careful handling is required. As a precautionary measure, we recommend using a ground wrist strap when handling the electronic control. Wrist strap, cord and alligator clip are designed to carry away any electrostatic charge from your body and to direct charge to an available ground. By using this static protection device, potential electrostatic discharge problems associated with handling of electronic control will be minimized. Always handle electronic control by its metal edges. If a wrist strap is not available, touch washer while it is plugged in before handling control to dissipate any charge.

NOTE: New control is supplied in a special anti-static wrapping, and protected by anti-static foam. While holding control by its metal edges, remove control from foam and wrapping.

(1) Remove two control panel attaching screws. Refer to *Figure 6*. Lay control panel assembly face down on protective padding.
(2) Press in on locking tabs and unplug harness disconnect blocks from backside of electronic control assembly. Refer to *Figure 9*.

NOTE: DO NOT pull on wires. Instead, hold board near appropriate disconnect block and unplug by pulling on disconnect block.

(3) Remove four screws holding electronic control assembly to backside of control panel. Refer to *Figure 9*.
(4) Place the old control in the anti-static wrapping that the new control was supplied in.
(5) While holding new control by its metal edges, carefully peel off protective plastic coating from front side of control. Then place control in opening of control panel and fasten control down with four screws.
(6) Follow wiring diagram and reconnect wires to new control.

IMPORTANT: It is important to take care when handling the original control. It must be carefully placed in the anti-static wrapping and anti-static foam which was removed from new control. If control is not wrapped properly, warranty credit will not be issued.

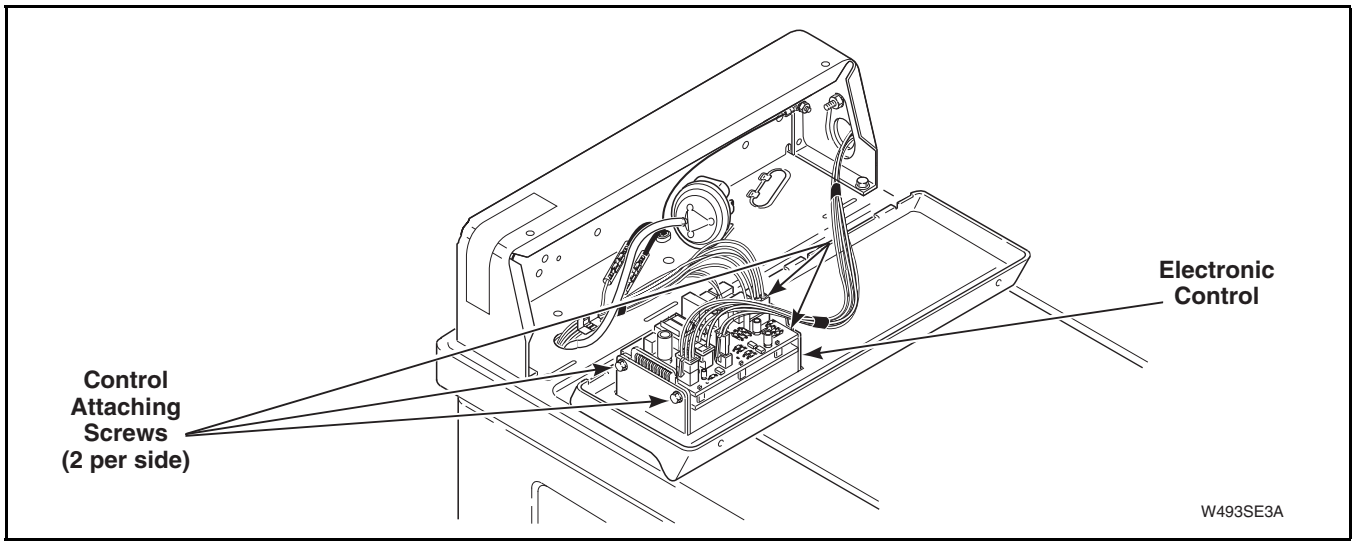

Figure 9

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WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:
- **Disconnect electric power to the washer before servicing.**
- **Never start the washer with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.**

W003

f. **Control Panel Overlay (Removal):**

(1) Remove control panel attaching screws and lay assembly forward on protective pad on cabinet top.

(2) Loosen setscrews holding switch knobs to switch shafts. Refer to *Figure 8*.

(3) Remove knurled nuts holding switches to control panel. Refer to *Figure 8*.

NOTE: Lockwashers must be between switches and control panel when installing switches. Refer to *Figure 8*.

(4) Disconnect wires from switches and indicator lights.

NOTE: Refer to appropriate wiring diagram when rewiring switches and indicator lights.

(5) Remove control panel overlay by peeling it from control panel frame.

NOTE: Control panel overlay has an adhesive backing.

g. **Control Panel Overlay (Installation):**

NOTE: Before removing protective backing from new overlay, check fit of overlay to control panel frame. Switch holes are the locating guides.

(1) Once panel overlay is fitted to the front of control panel frame, carefully peel protective backing from the left end of panel overlay and press into place.

(2) Remove rest of protective backing from panel overlay and firmly press overlay into place on control panel frame.

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WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:
- **Disconnect electric power to the washer before servicing.**
- **Never start the washer with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.**

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32. TIMER ASSEMBLY

a. **Timer Removal (Metered Models):**

NOTE: DO NOT attempt to repair timer.

(1) Unlock and remove meter case service door.
(2) Remove timer bracket cap screw. Refer to *Figure 10*.
(3) Slide timer bracket left to disengage bracket from shoulder screw. Lift timer and bracket up and out of meter case through service door opening as far as wires will permit.

NOTE: If only replacing clutch, proceed to Step 7.

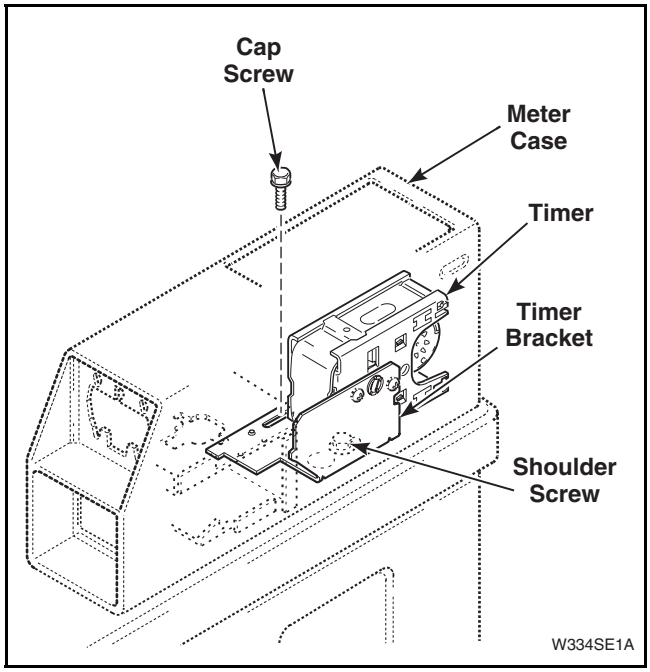

Figure 10

(4) Disengage wire harness terminal block plug from timer by pressing in movable locking tabs (located on each side of terminal block plug). Refer to *Figure 11*. Then pull terminal block plug away from timer.
(5) Disconnect ground wire from terminal on timer. Refer to *Figure 11*.

IMPORTANT: To avoid an open circuit, DO NOT pull on terminal block wires when removing block from timer as this could damage wires or terminal crimpings. Before attaching wire harness terminal blocks to timer, be sure all male terminals on timer are straight and are capable of accepting terminals from wire harness terminal blocks.

IMPORTANT: Be careful not to dislodge or damage two timer motor lead wires while handling timer.

NOTE: To avoid timer damage, do not allow timer to be struck on corners, edges of frame or on timer shaft.

(6) Remove two screws holding timer to timer bracket. Refer to *Figure 11*.
(7) Loosen setscrew holding clutch to timer shaft. Refer to *Figure 12*.

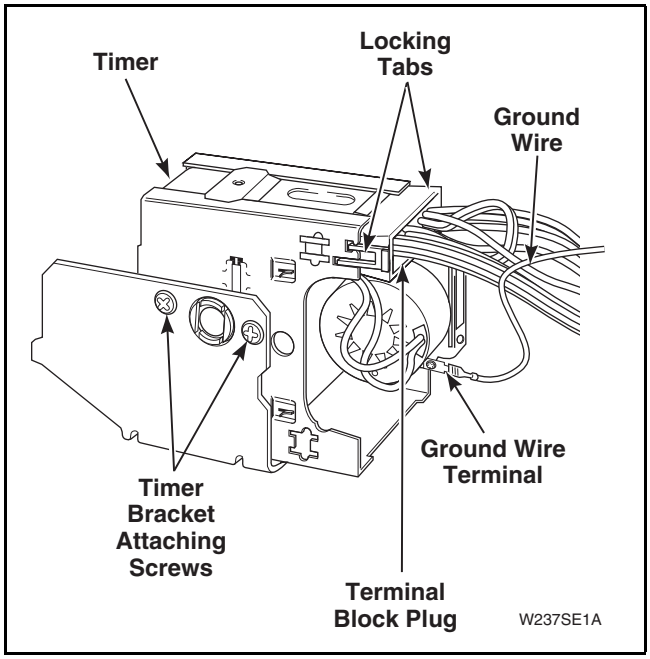

Figure 11

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WARNING

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- **Disconnect electric power to the washer before servicing.**
- **Never start the washer with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.**

W003

b. **Timer Installation (Metered Models):**
   (1) Place clutch on timer shaft and tighten setscrew. Refer to *Figure 12*.

NOTE: When installing clutch, make sure clutch moves freely after setscrew is tightened.

   (2) Attach timer to timer bracket using two screws. Refer to *Figure 11*.
   (3) Reconnect wire harness terminal block plug and ground wire to timer.
   (4) Carefully place timer and timer bracket down inside meter case so keyhole slot in bracket fits over the head of shoulder screw. Refer to *Figure 10*.
   (5) After positioning timer bracket over shoulder screw, slide timer and bracket forward until bottom front of bracket contacts rear of coin vault in meter case. Refer to *Figure 10*.
   (6) While holding timer bracket up against rear of coin vault, install cap screw and tighten firmly. Refer to *Figure 10*.
   (7) Make sure wire harness is routed along bottom of meter case so it will not interfere with any moving parts in meter case.

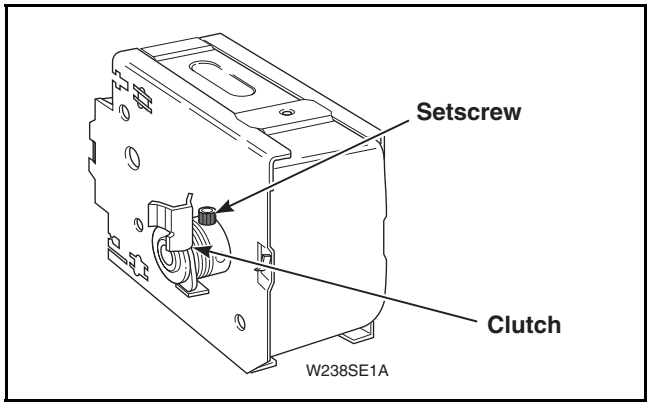

Figure 12

c. **Timer Removal (Nonmetered Models):**
   (1) Loosen two setscrews holding timer knob to timer shaft. Refer to *Figure 13*.
   (2) Remove four screws and lockwashers holding timer and plate to timer case. Refer to *Figure 13*.

NOTE: When reinstalling timer and plate, lockwashers must be between heads of screws and timer plate.

   (3) Pull timer and plate out of timer case as far as wires will permit.

NOTE: Disconnect ground wire from ground terminal on timer.

   (4) Pull wire harness and blocks through into timer case; then disconnect timer harness from control hood harness at quick disconnect block.
   (5) Remove two screws holding timer to timer plate. Refer to *Figure 13*.
   (6) Disconnect wires from timer.

NOTE: Refer to appropriate wiring diagram when rewiring timer.

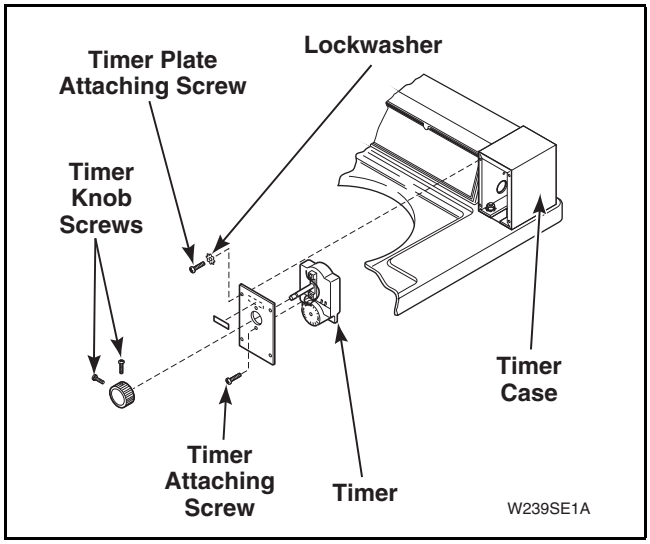

Figure 13

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WARNING

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W003

33. METER OR TIMER CASE ASSEMBLY

a. **Meter Case Removal (Metered Models):**

(1) Remove two control panel attaching screws and lay assembly forward on protective pad on cabinet top. Refer to *Figure 6*.
(2) Disconnect timer harness from control hood harness at disconnect blocks. Refer to *Figure 7*.
(3) Remove timer assembly. Refer to *Paragraph 32*.
(4) Remove cap screw, lockwashers and nut holding meter case to end of control hood.
(5) Remove coin drawer.
(6) Remove shoulder screw from inside meter case.

NOTE: When installing meter case, shoulder screw must be installed in outer hole, to enable timer bracket to slide under screw head. Refer to *Figure 10*.

(7) Remove front panel assembly. Refer to *Paragraph 37*.
(8) Remove carriage bolts and locknuts holding meter case to cabinet top.
(9) Carefully remove meter case and gasket from cabinet top.

b. **Timer Case Removal (Nonmetered Models):**

(1) Remove timer from timer case. Refer to *Paragraph 32*, step c.
(2) Remove two control panel attaching screws and lay assembly forward on a protective pad on cabinet top. Refer to *Figure 6*.
(3) Remove cap screw, lockwashers and nut holding timer case to control hood. Refer to *Figure 14*.
(4) Remove front panel assembly. Refer to *Paragraph 37*.
(5) Remove two cabinet top hold down screws. Refer to *Figure 30*.
(6) Tape loading door closed and lift cabinet top to a vertical position.
(7) Remove carriage bolts, vinyl washers, lockwashers, and nuts holding timer case to cabinet top.
(8) Support timer case and remove screw and fiber washer holding rear of case to cabinet top.

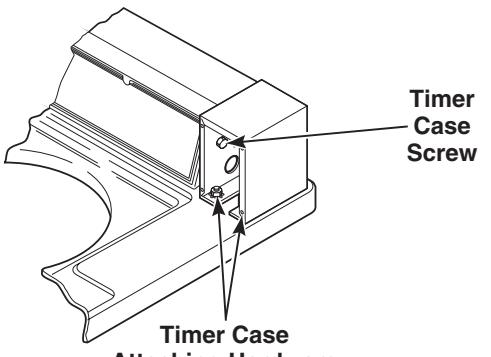

Figure 14

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WARNING

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- **Never start the washer with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.**

W003

34. COIN DROP

SINGLE COIN DROP

a. Unlock and open service door.

NOTE: If screw type lock is used, the retainer bracket must be removed from inside meter case.

b. Disconnect wire harness from coin drawer switch and disconnect coin drop at disconnect plugs.

c. Press in on locking tabs of service door switch and remove switch from bracket on meter case, as shown in *Figure 15*.

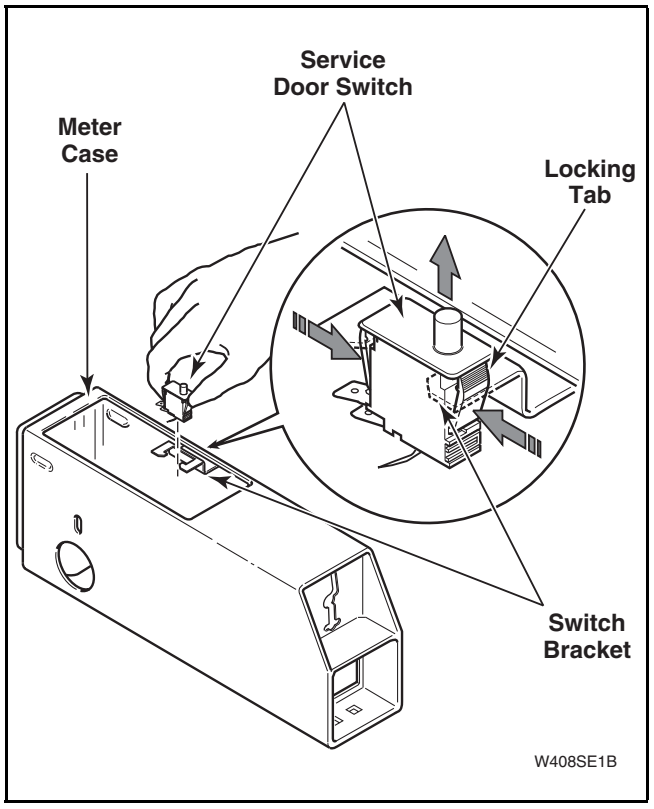

Figure 15

d. Use a 7/16 inch socket with No. 310P4 1/4 inch Ratchet Extension Tool and remove two locknuts holding coin drop to front of meter case. Refer to *Figure 16*.

e. Lift back end of coin drop and pull straight back until bottom edge of drop's front face plate falls behind the coin drawer housing.

f. Carefully lift complete coin drop straight up and out of meter case.

g. Reverse removal procedures for installation.

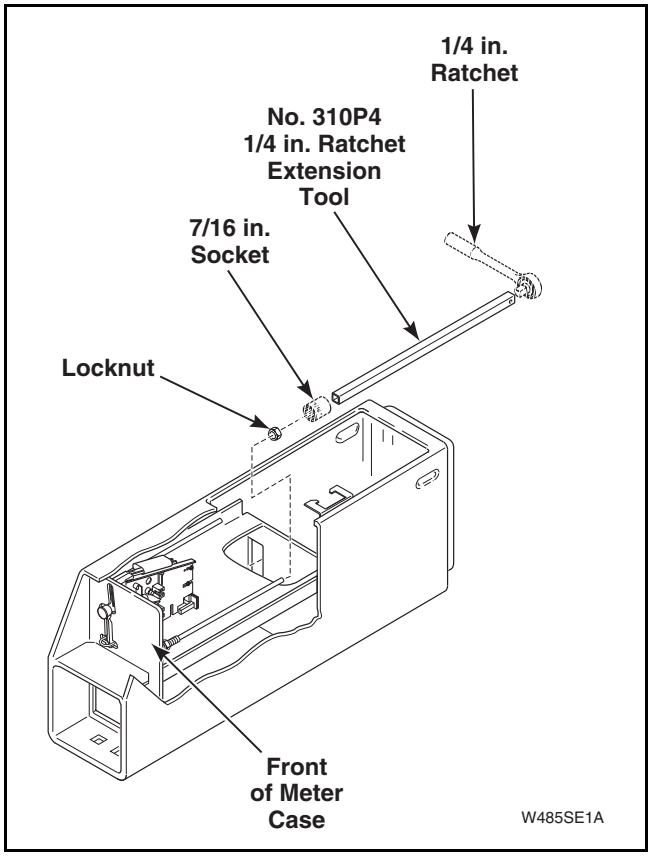

Figure 16

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WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:
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- **Never start the washer with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.**

W003

DUAL COIN DROP

a. Unlock and open service door.

NOTE: If screw type lock is used, the retainer bracket must be removed from inside meter case.

b. Disconnect wire harness from coin drawer switch and disconnect coin drops at disconnect plugs.
c. Press in on locking tabs of service door switch and remove switch from bracket on meter case, as shown in *Figure 17*.
d. Remove wire harness from multiplier. Refer to *Figure 18*. Move wire harness out of the way.
e. Remove multiplier from inside meter case. Refer to *Figure 18*.

NOTE: Multiplier is held inside meter case by two Velcro strips.

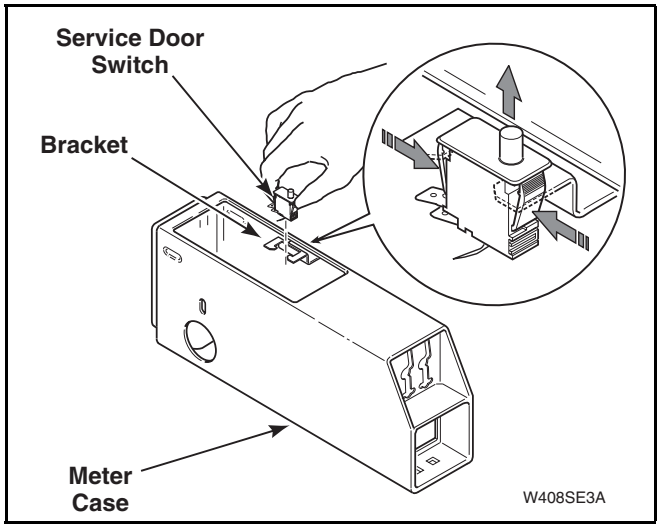

Figure 17

f. Press in on locking tabs of coin drawer switch and remove switch through front of meter case. Refer to *Figure 18*.
g. Use a 7/16 inch socket with No. 310P4 1/4 inch Ratchet Extension Tool and remove two locknuts holding coin drop to front of meter case. Refer to *Figure 18*.

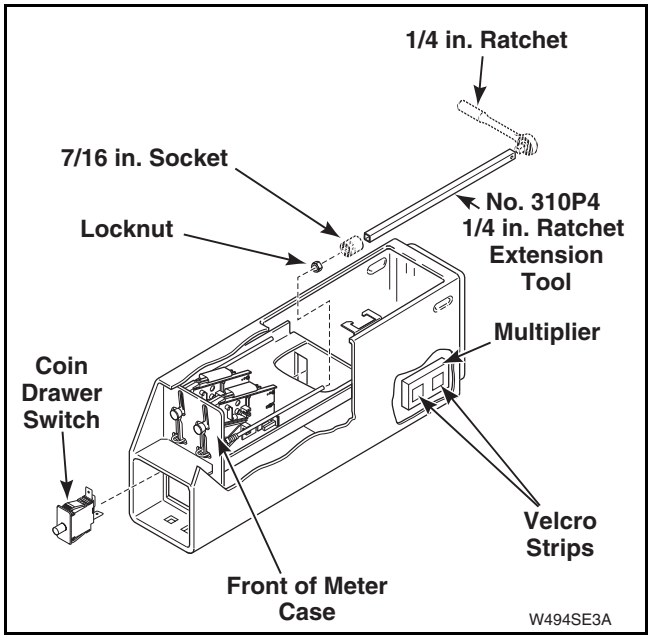

Figure 18

h. Lift back end of coin drop and pull straight back until bottom edge of the drop's front face plate falls behind the coin drawer housing. Refer to *Figure 19*.

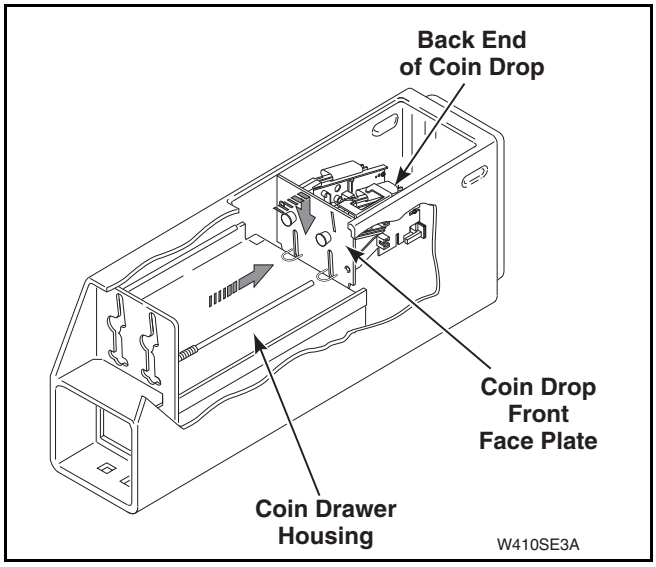

Figure 19

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WARNING

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- **Disconnect electric power to the washer before servicing.**
- **Never start the washer with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.**

W003

i. Lift up back end of coin drop until the two coin-return stops slide down past the coin drawer housing, as shown in *Figure 20*.
j. While holding back end of drop, allow drop's front face plate to rest on bottom of meter case. Refer to *Figure 20*.

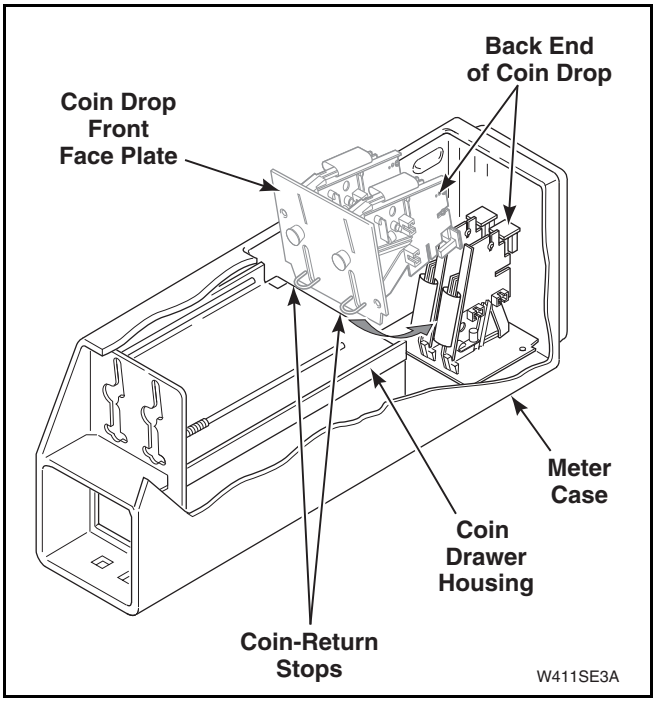

Figure 20

k. Carefully lift complete coin drop straight up and out of meter case. Refer to *Figure 21*.

NOTE: When lifting drop out of meter case, tip drop slightly so front face plate clears service door opening. Refer to *Figure 21*.

TO INSTALL DUAL COIN DROP

a. Gently work new coin drop into meter case with the drop's front face plate down. Refer to *Figure 22*.
b. Carefully pull front of coin drop up and forward, so the drop's front face plate clears the meter case's door switch bracket. Refer to *Figure 23*.

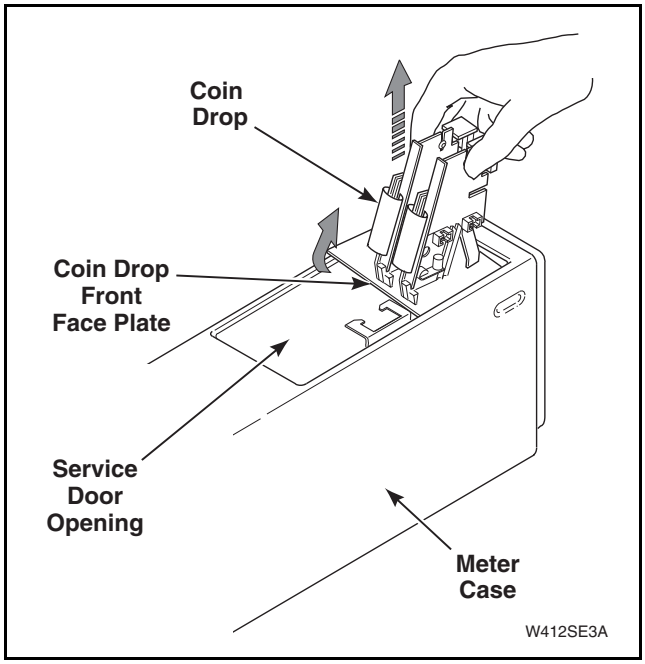

Figure 21

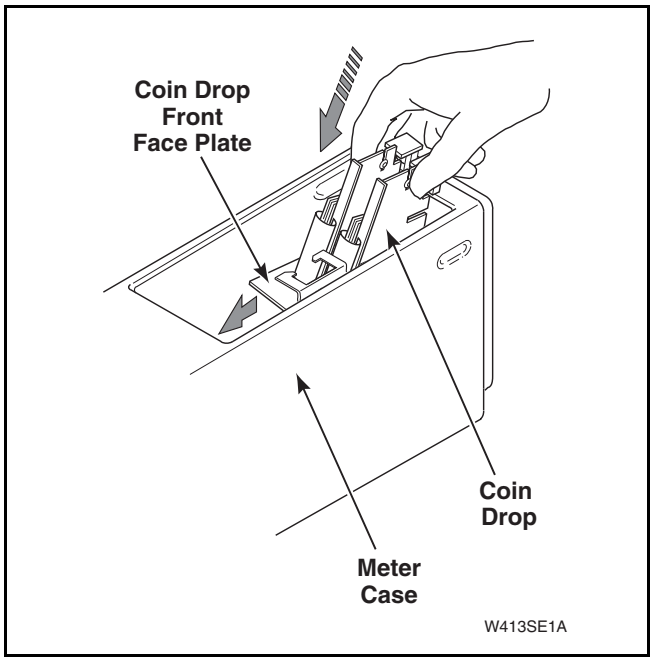

Figure 22

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WARNING

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- **Never start the washer with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.**

W003

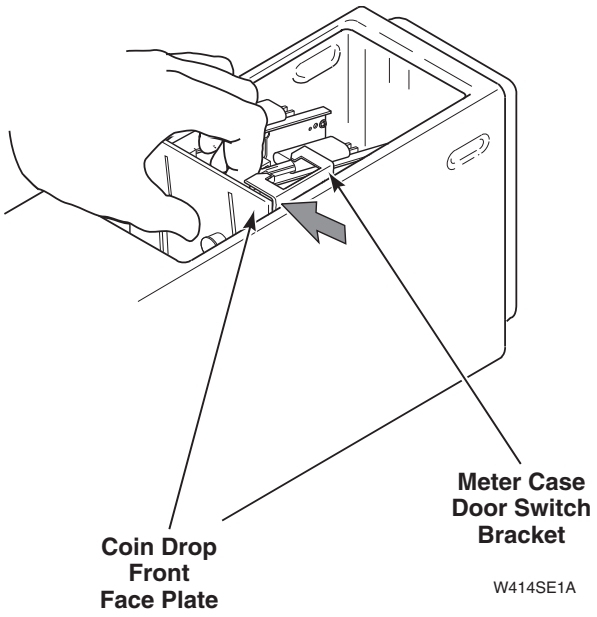

Figure 23

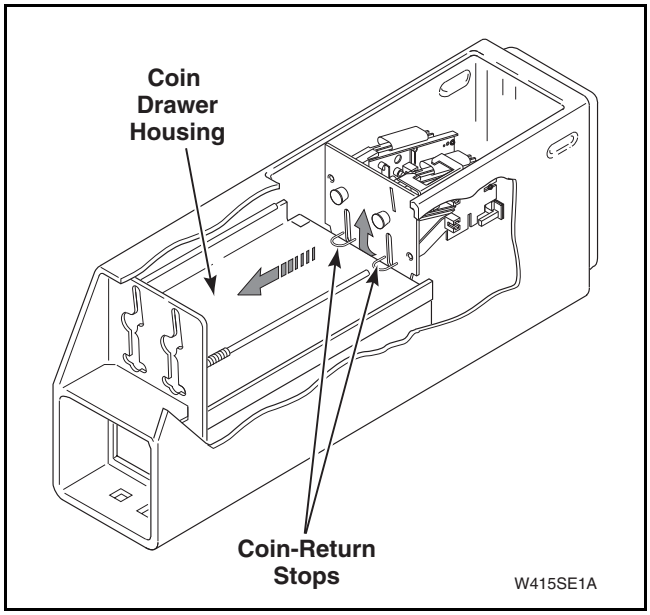

Figure 24

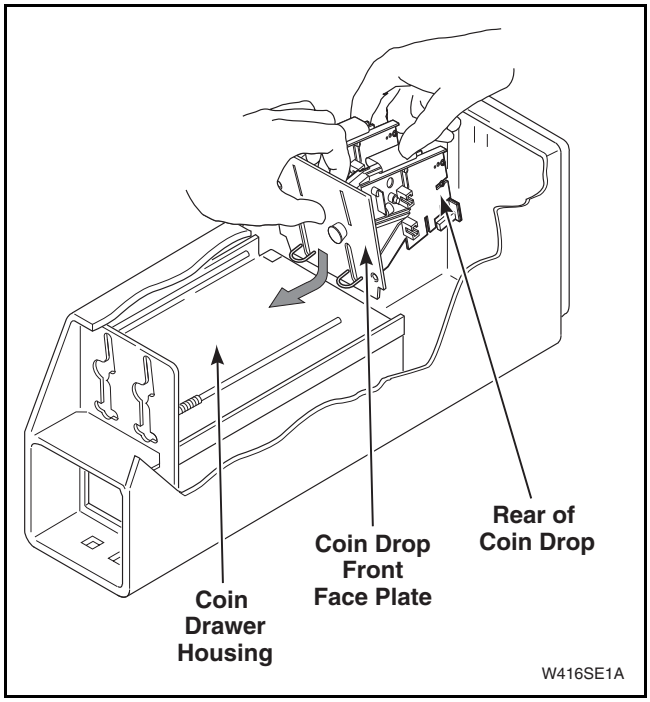

Figure 25

c. Rest the two coin-return stops on top of the coin drawer housing, as shown in *Figure 24*.
d. Grasp top of coin drop front face plate between the two drops, as shown in *Figure 23*.
e. Lift up front face plate of coin drop with one hand, while gently pushing down rear of drop with other hand, so the bottom of the drop's front face plate clears coin drawer housing. Refer to *Figure 25*.
f. Carefully slide coin drop forward into position, as shown in *Figure 26*. (Front face plate of coin drop should be secure against front plate of meter case.)
g. Using a 7/16 inch socket with No. 310P4 1/4 inch Ratchet Extension Tool, reinstall the two locknuts previously removed. Tighten locknuts firmly.
h. Reinstall coin drawer switch previously removed.
i. Reconnect wires by referring to the wiring diagram located inside the control hood.
j. Reinstall service door switch and wire harness into meter case bracket. Refer to *Figure 17*.

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WARNING

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- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.**

W003

k. Reinstall multiplier and reconnect wires. Refer to *Figure 18*.
l. Close and lock service door.

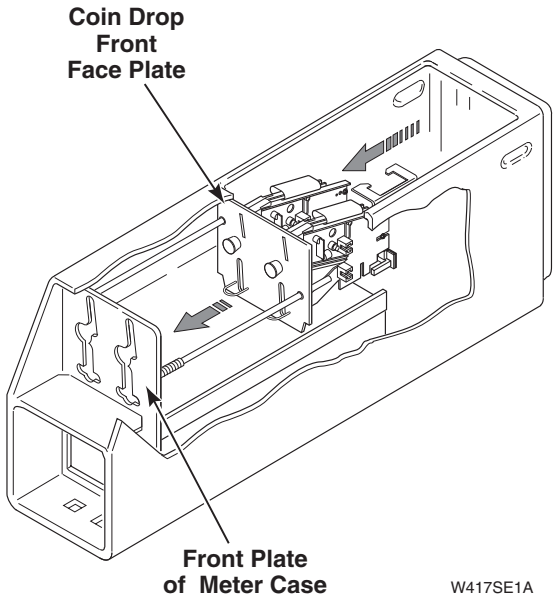

Figure 26

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W003

35. DRAIN HOSE ELBOW

a. Loosen hose clamp and remove drain hose from elbow. Refer to *Figure 27*.
b. Remove screws holding elbow to rear of washer cabinet. Refer to *Figure 27*.
c. Pull elbow out through opening in cabinet far enough to loosen inner clamp, then remove elbow from inner hose.

NOTE: When installing elbow on inner hose, DO NOT allow hose inside of washer to twist! Direct elbow toward drain receptacle and secure elbow to washer cabinet.

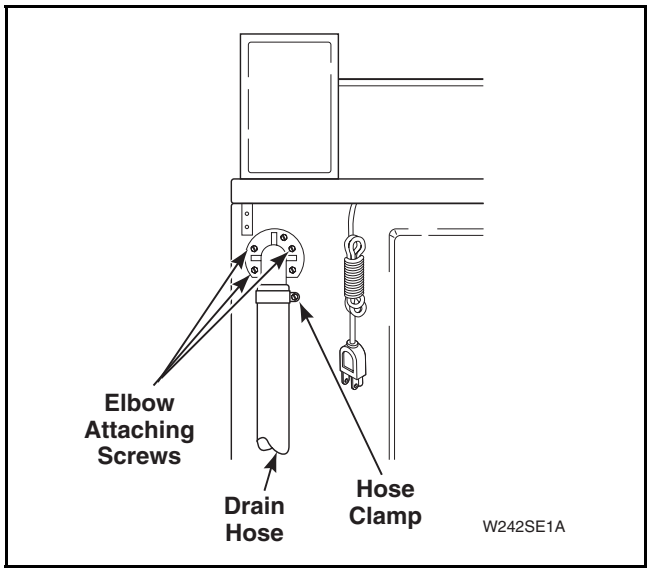

Figure 27

36. LOADING DOOR

a. Open loading door. Refer to *Figure 28*.
b. Remove two screws holding left hinge to door and remove hinge. Refer to *Figure 28*.
c. With loading door raised to vertical position, swing left side of door toward front of washer. Refer to *Figure 29*, procedure one.
d. Rotate loading door so door is upside down. Refer to *Figure 29*, procedure two.
e. Remove loading door, right door hinge and bushing from cabinet top. Refer to *Figure 29*, procedure three.

NOTE: Reverse procedures when installing loading door.

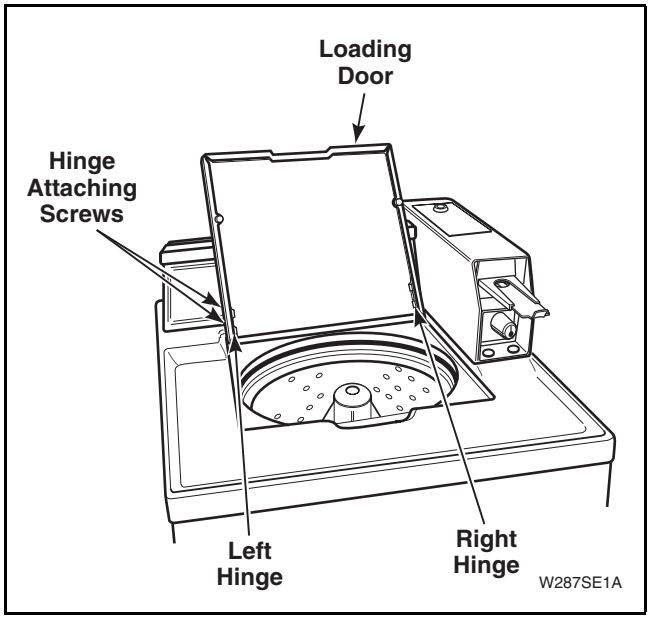

Figure 28

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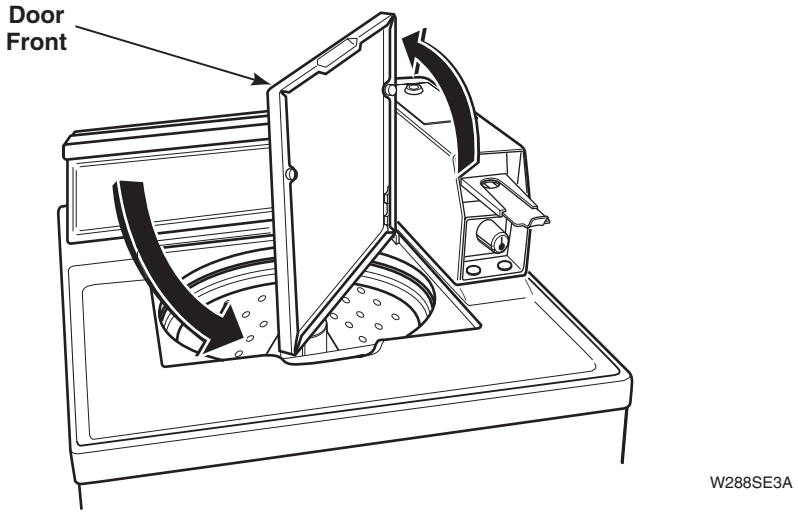
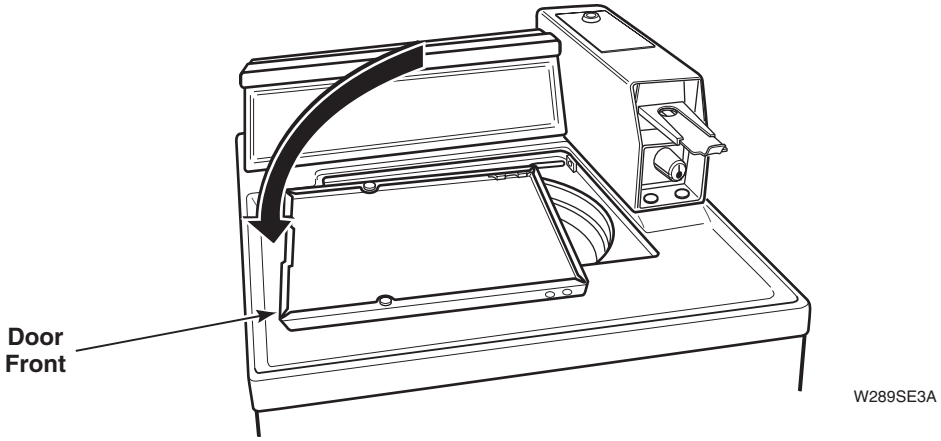
PROCEDURE ONE



PROCEDURE TWO



PROCEDURE THREE

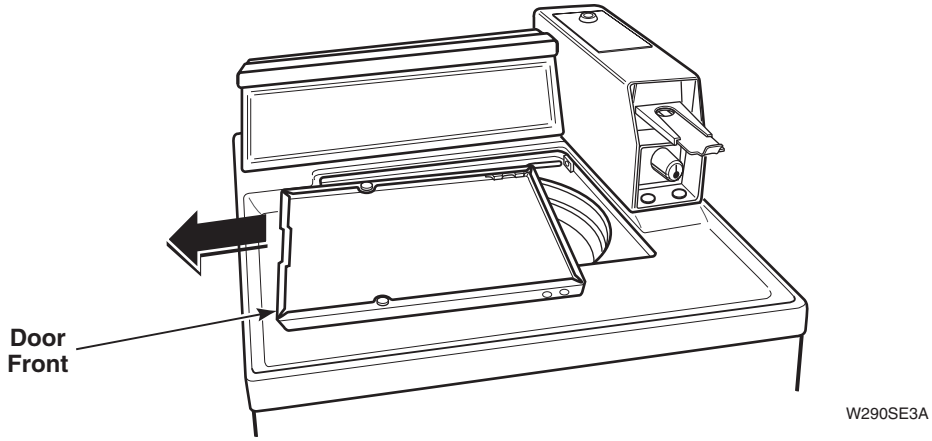


Figure 29

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- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.**

W003

37. FRONT PANEL

Refer to *Figure 30*.

a. Remove two screws from bottom edge of front panel.

b. Pull bottom of panel away from washer until hold-down clips (located on top flange of panel) disengage from slots in cabinet top.

Hold-Down Clips

Compress hold-down clips enough to remove them from slots in top flange of panel.

Guide Lugs

Remove screws holding guide lugs to side flanges of front panel.

Brace

Remove screws holding brace to side flanges of front panel. Remove brace from front panel by swinging one end toward bottom of front panel and remove brace.

38. MOTOR AND MOUNTING BRACKET

a. Remove two screws from bottom edge of front panel. Refer to *Figure 30*.

b. Pull bottom of panel away from washer until hold-down clips (located on top flange of panel) disengage from slots in cabinet top.

IMPORTANT: There will always be some water that will remain in outer tub, therefore, before removing hoses from pump, hoses must be pinched off or drained to prevent water spillage.

c. Loosen hose clamps and remove hoses from pump assembly. Refer to *Figure 31*.

d. Unhook idler spring from clip on front of motor mounting bracket. Refer to *Figure 31*.

IMPORTANT: Use care when releasing idler lever tension. If idler spring is overstretched, washer operation will be affected.

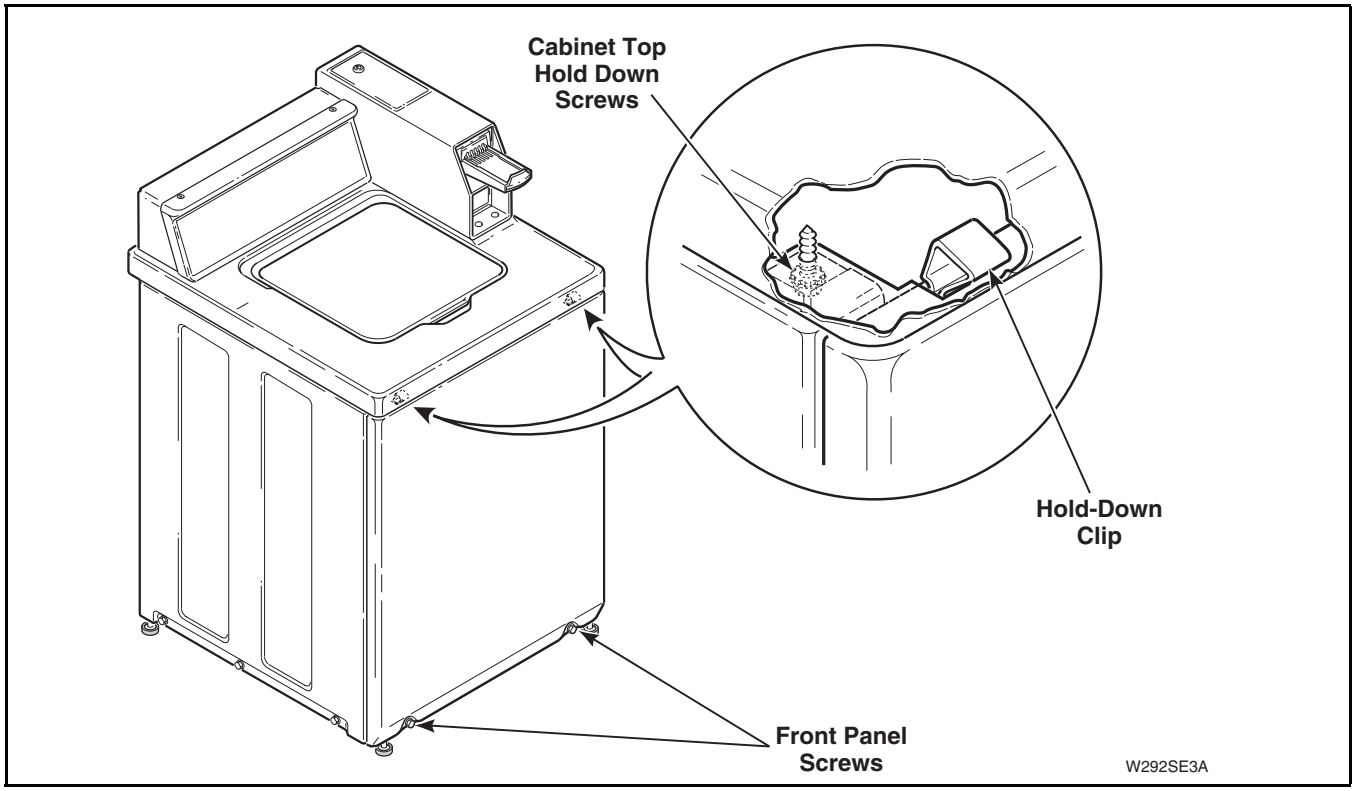

Figure 30

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- **Never start the washer with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.**

W003

e. Reach in and around right side of motor and run belt off right side of large drive pulley. Refer to *Figure 31*.
f. Disconnect wire harness from motor switch by pressing down on locking tab on top of connection block and at the same time pull connection block away from motor switch. Refer to *Figure 32*.
g. Remove four screws holding motor and mounting bracket to washer base, then lift complete assembly out of washer. Refer to *Figure 32*.

IMPORTANT: Carefully lay motor on its side. Observe belt configuration around rear pump leg. Belt MUST encircle rear pump leg when reassembling. Refer to *Figure 33*.

PUMP AND BELT REMOVAL

a. Remove three screws holding pump assembly to motor. Refer to *Figure 33*.

REASSEMBLY OF PUMP AND BELT

IMPORTANT: Install pump and belt together. Drive belt MUST be replaced with belt No. 28808 (60 Hertz) or 35517 (50 Hertz) (special clutch-type belt) for proper washer operation.

a. Clean any corrosion or foreign material from motor shaft that will be contacting the double "D" slot in pump impeller.
b. Apply a thin film of No. 03637P Lubricant to end and sides of motor shaft. This lubricant helps keep moisture out of the hub area and retards corrosion.
c. Align pump impeller hub with motor shaft. Make sure belt encircles rear pump leg, carefully push pump onto motor shaft so three pump legs bottom out in the embosses on motor housing before screws are tightened. Refer to *Figure 33*.
d. Tighten three screws to 35 inch pounds max. DO NOT overtighten screws!
e. Reinstall motor and pump assembly into washer.

IMPORTANT: After installing motor and pump assembly in washer and all hoses have been reconnected, add at least a quart of water to washtub to lubricate pump seals. Running a pump without water will ruin its seals.

MOTOR REMOVAL

Remove nuts, steel washers, spacers and rubber mounts holding motor to mounting bracket. Refer to *Figure 34*. Lift motor off mounting bracket and remove balance of rubber mounts and steel washers from motor mounting studs.

IMPORTANT: When installing motor on mounting bracket, position motor with switch facing toward left side of mounting bracket.

NOTE: Refer to *Figure 34* for motor and mounting bracket assembly sequence.

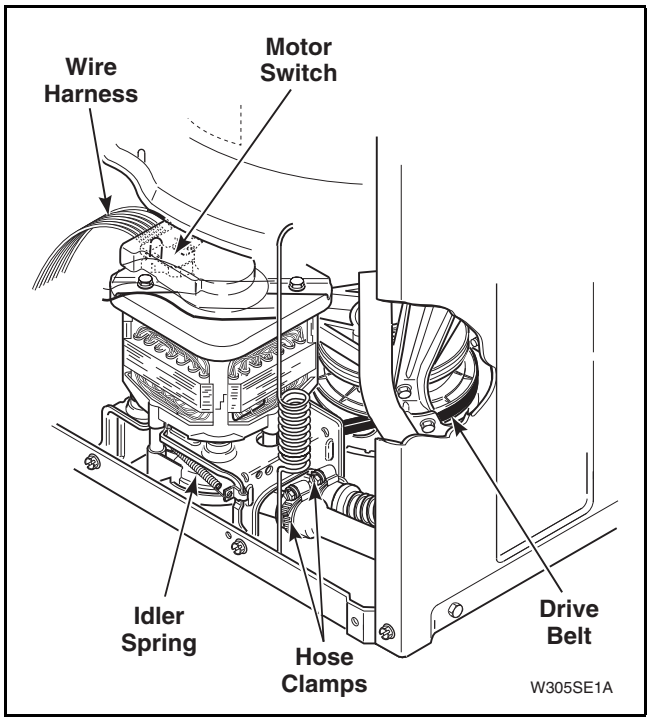

Figure 31

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WARNING

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- **Never start the washer with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.**

W003

39. IDLER LEVER AND PULLEY

a. Remove two screws from bottom edge of front panel. Refer to *Figure 30*.
b. Pull bottom of panel away from washer until hold-down clips (located on top flange of panel) disengage from slots in cabinet top.

IMPORTANT: There will always be some water that will remain in outer tub, therefore, before removing hoses from pump, hoses must be pinched off or drained to prevent water spillage.

c. Loosen hose clamps and remove hoses from pump assembly. Refer to *Figure 31*.
d. Unhook idler spring from idler lever. Refer to *Figure 34*.

IMPORTANT: Use care when removing idler spring. If idler spring is overstretched, washer operation will be affected.

e. Reach in and around right side of motor and run belt off right side of large drive pulley. Refer to *Figure 31*.
f. Disconnect wire harness from motor switch by pressing down on locking tab on top of connection block and at the same time pull connection block away from motor switch. Refer to *Figure 32*.
g. Remove four screws holding motor assembly to washer base, then lift complete assembly out of washer. Refer to *Figure 32*.
h. Remove nut, washer and bolt holding idler lever and pulley to motor mounting bracket,

NOTE: Refer to *Figure 34* for idler lever and pulley assembly sequence.

i. Apply a light film of No. 03637P Lubricant to area of idler lever that makes contact with motor mounting bracket.

IMPORTANT: DO NOT OVER LUBRICATE! Excess lubricant can be thrown into pivot dome area during normal washer operation. Any lubricant on pivot dome or snubber pad and isolator assembly will cause premature tripping of the out-of-balance switch. This condition will persist until lubricant is removed.

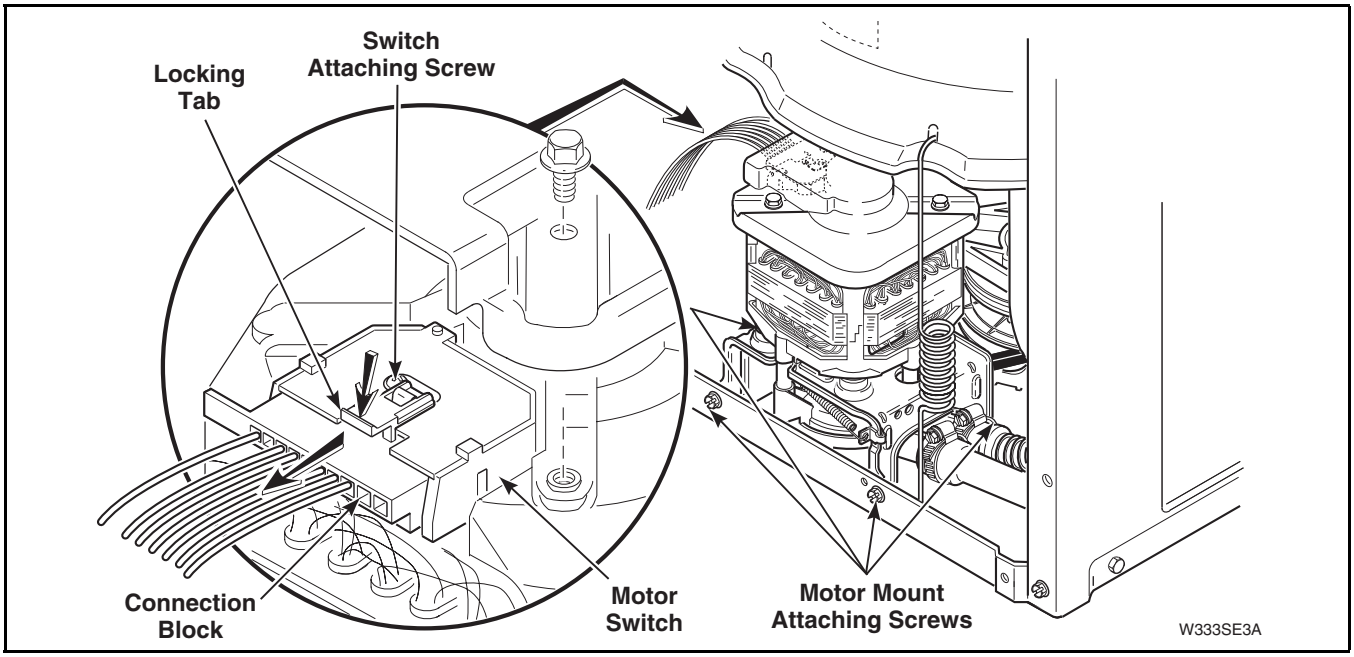

Figure 32

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WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:
- **Disconnect electric power to the washer before servicing.**
- **Never start the washer with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.**

W003

40. MOTOR DRIVE PULLEY

a. Remove two screws from bottom edge of front panel. Refer to *Figure 30*.
b. Pull bottom of panel away from washer until hold-down clips (located on top flange of panel) disengage from slots in cabinet top.

IMPORTANT: There will always be some water that will remain in outer tub, therefore, before removing hoses from pump, hoses must be pinched off or drained to prevent water spillage.

c. Loosen hose clamps and remove hoses from pump assembly. Refer to *Figure 32*.
d. Unhook idler spring from idler lever. Refer to *Figure 34*.

IMPORTANT: Use care when removing idler spring. If idler spring is overstretched, washer operation will be affected.

e. Reach in and around right side of motor and run belt off right side of large drive pulley. Refer to *Figure 31*.
f. Disconnect wire harness from motor switch by pressing down on locking tab on top of connection block and at the same time pull connection block away from motor switch. Refer to *Figure 32*.
g. Remove four screws holding motor assembly to washer base, then lift complete assembly out of washer. Refer to *Figure 32*.
h. Lay motor assembly on its side.

NOTE: To remove pulley, support motor shaft (to prevent bending shaft) and drive out pulley roll pin. Refer to *Figure 34*.

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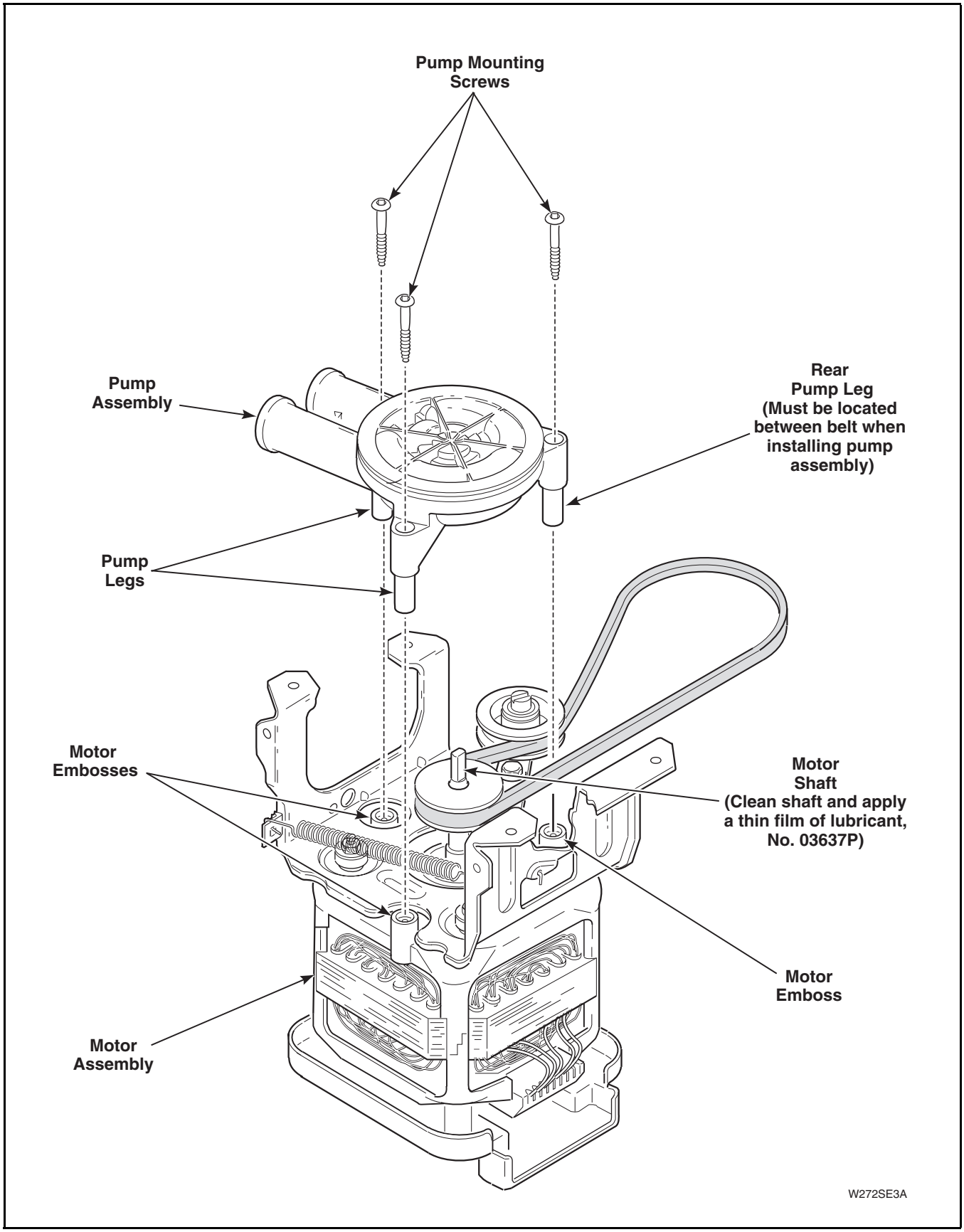
Pump Mounting Screws
Pump Assembly
Rear Pump Leg (Must be located between belt when installing pump assembly)
Pump Legs
Motor Embosses
Motor Shaft (Clean shaft and apply a thin film of lubricant, No. 03637P)
Motor Emboss
Motor Assembly
W272SE3A

Figure 33

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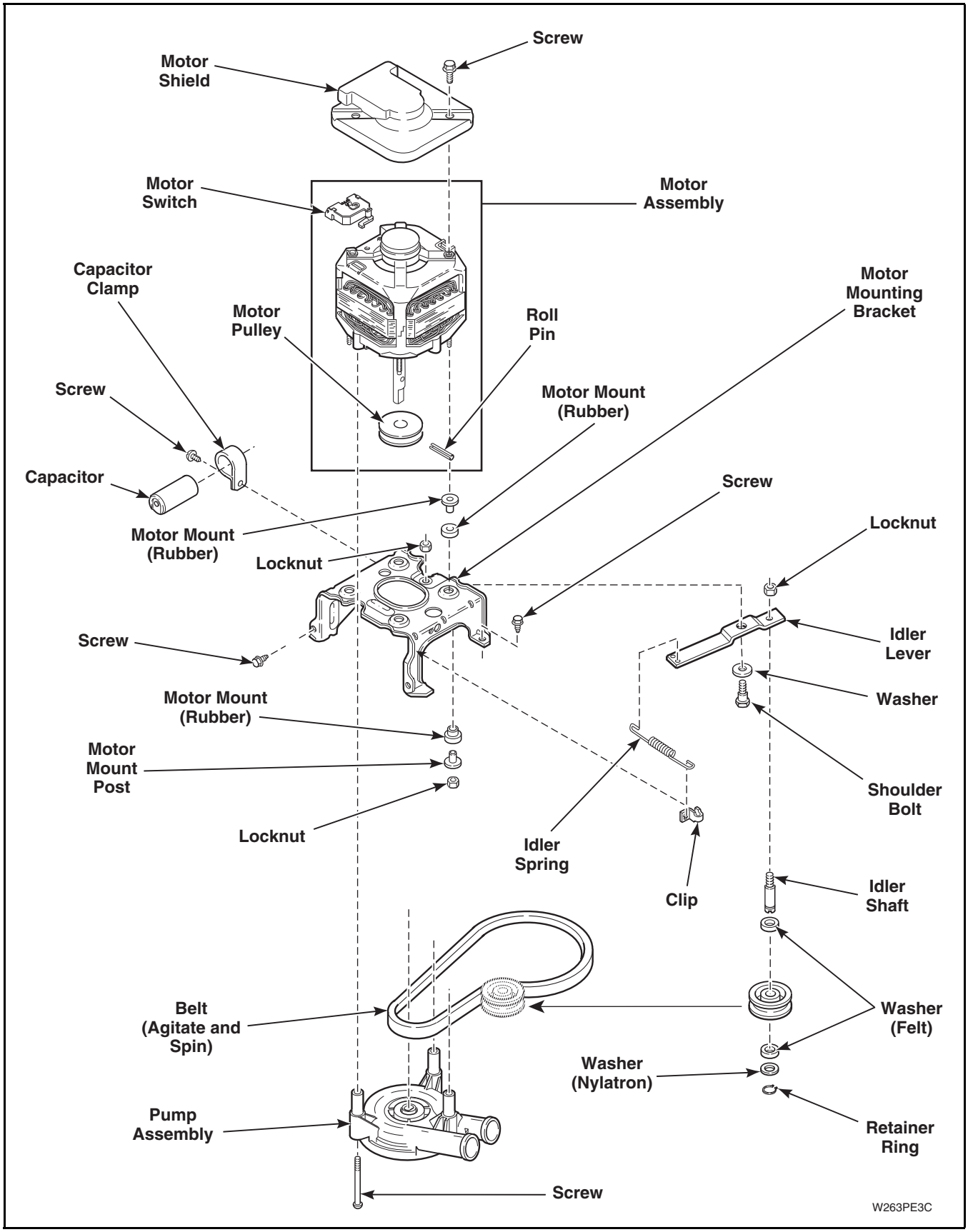

Figure 34

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WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:
- **Disconnect electric power to the washer before servicing.**
- **Never start the washer with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.**

W003

41. MOTOR SWITCH

a. Remove two screws from bottom edge of front panel. Refer to *Figure 30*.
b. Pull bottom of panel away from washer until hold-down clips (located on top flange of panel) disengage from slots in cabinet top.
c. Remove two screws holding motor shield to motor, and remove shield. Refer to *Figure 34*.
d. Disconnect wire harness from motor switch by pressing down on locking tab on top of connection block and at the same time pull connection block away from motor switch. Refer to *Figure 32*.

IMPORTANT: To avoid an open circuit, DO NOT pull on terminal block wires when removing block from motor switch as this could damage wires or connection crimpings. Before attaching wire harness connection block to motor switch, make sure all male terminals on motor switch are straight and are capable of accepting terminals from wire harness connection block.

e. Remove screw holding motor switch to motor and remove switch. Refer to *Figure 32*.
f. Disconnect internal motor leads from motor switch terminals.

NOTE: Refer to Wiring Schematics, Section 9 for rewiring internal switch wires.

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WARNING

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W003

42. AGITATOR

a. Open loading door.

b. Remove agitator by placing two agitator hooks, No. 254P4P, under bottom edge of agitator. Refer to *Figure 35*.

IMPORTANT: Hooks should be positioned 180 degrees apart and must be placed under agitator vane for greater stability. If hooks are placed between vanes, damage to agitator may occur.

c. Using a rocking motion (back and forth) carefully lift agitator off drive bell.

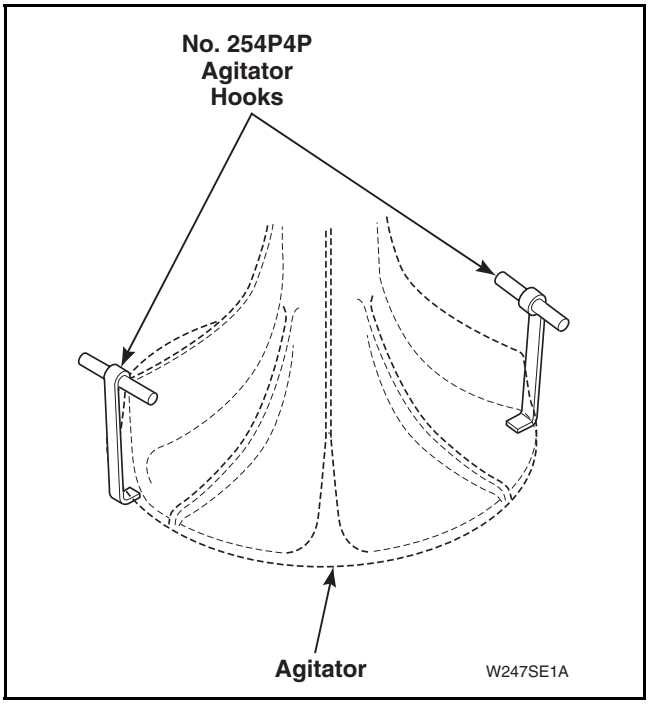

Figure 35

43. CABINET TOP ASSEMBLY

a. Remove front panel. Refer to *Paragraph 37*.

b. **Metered Models:**

(1) Remove timer assembly. Refer to *Paragraph 32*, step a.

(2) Remove shoulder screw and cap screw from inside meter case.

(3) Remove two cabinet top hold down screws.

(4) Remove security bolt (if present) from left rear corner of cabinet top.

NOTE: When lowering cabinet top into position or reinstalling cabinet top, pivot outer tub forward far enough to prevent damaging (bending) out-of-balance switch lever.

c. Tape loading door closed and lift cabinet top to a vertical position by hinging it on the rear hold-down brackets.

NOTE: Cabinet top is self supporting, however, a small chain may be used for additional support. Refer to *Figure 36*.

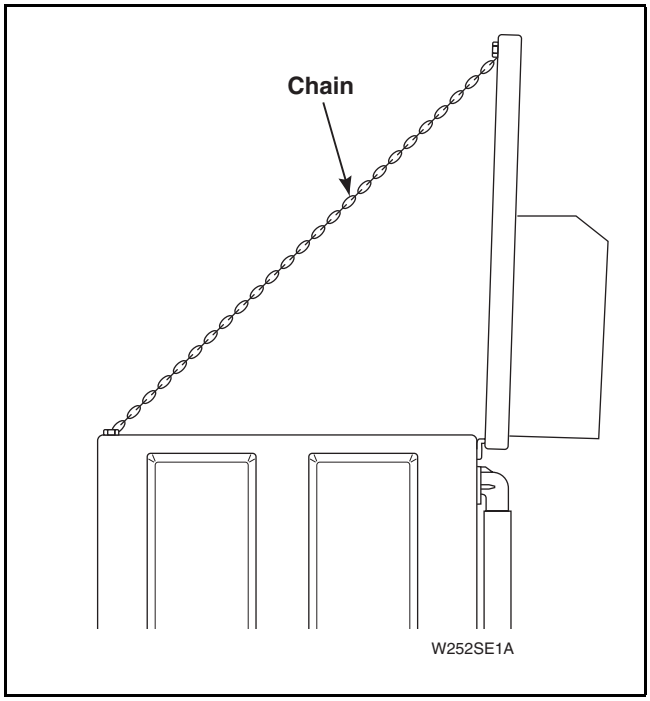

Figure 36

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WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:
- **Disconnect electric power to the washer before servicing.**
- **Never start the washer with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.**

W003

44. CABINET TOP ASSEMBLY REMOVAL

a. Open control panel assembly. Refer to *Paragraph 31*.

b. Disconnect pressure hose from pressure switch.

IMPORTANT: When installing pressure hose, blow air into hose before connecting hose to switch to remove any moisture that may have accumulated in the hose.

c. Push base wire harness block and pressure hose down through hole in cabinet top.

d. Tape loading door closed.

e. Open cabinet top assembly. Refer to *Paragraph 43*.

f. Lift front of cabinet top slightly and pull forward to disengage from rear hold-down brackets.

g. Pull top forward far enough to permit disconnecting ground wires from top rear corner gusset of washer cabinet, disconnect wires from mixing valve solenoids at rear of washer. Refer to *Figure 37*.

NOTE: Refer to appropriate wiring diagram when rewiring mixing valve solenoids.

h. Carefully lift cabinet top off washer and set on protective padding.

WARNING

To reduce the risk of serious injury, be careful not to damage door switch and out-of-balance switch assembly when removing cabinet top.

IMPORTANT: When reinstalling cabinet top and before lowering top into position, pivot outer tub forward far enough to prevent damaging (bending) out-of-balance switch lever.

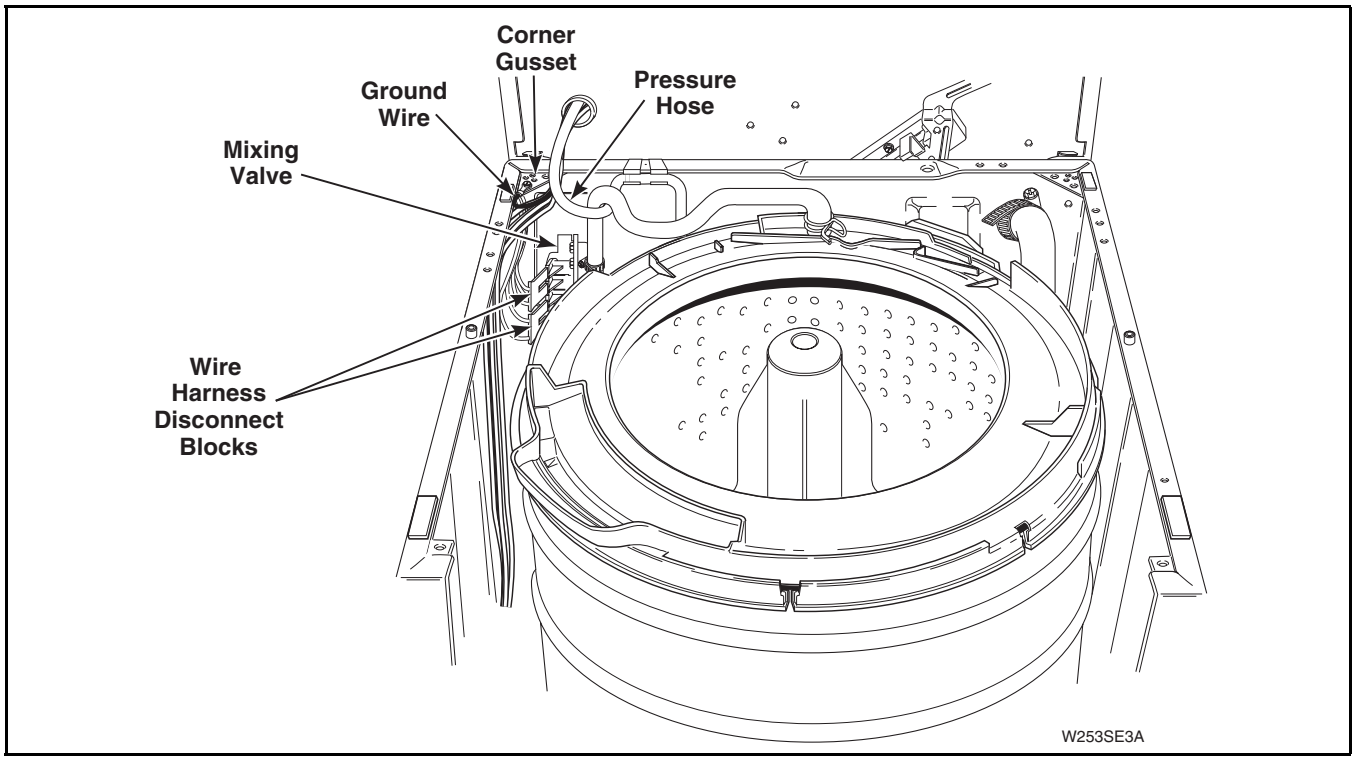

Figure 37

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WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:
- **Disconnect electric power to the washer before servicing.**
- **Never start the washer with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.**

W003

45. AGITATOR DRIVE BELL AND SEAL KIT, NO. 39508P

IMPORTANT: If water is present in washtub, spin and pump out before attempting to remove drive bell and seal assembly.

a. Remove agitator. Refer to *Paragraph 42*.
b. Remove plug, screw and o-ring washer from top of drive bell.

NOTE: Use No. 294P4 Drive Bell Tool to remove drive bell from transmission shaft.

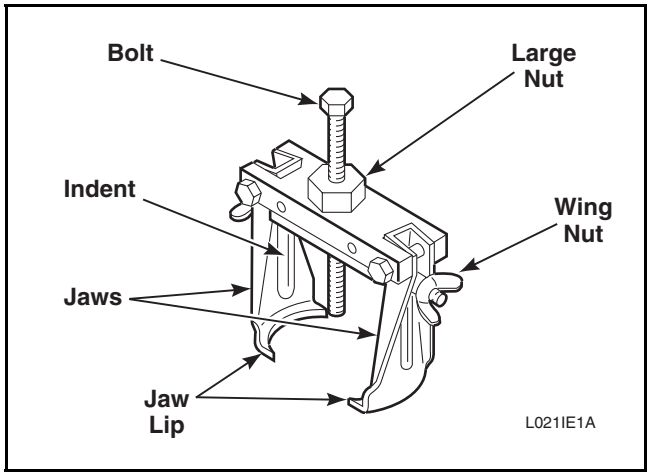

Figure 38

NOTE: Drive Bell Tool, No. 294P4, must be updated with jaws, No. 294P4A, and Bolt, No. 294P4B, to remove the 39508P Drive Bell Kit.

c. Back bolt out of 294P4 Drive Bell Tool approximately one third of the way. Refer to *Figure 38*.

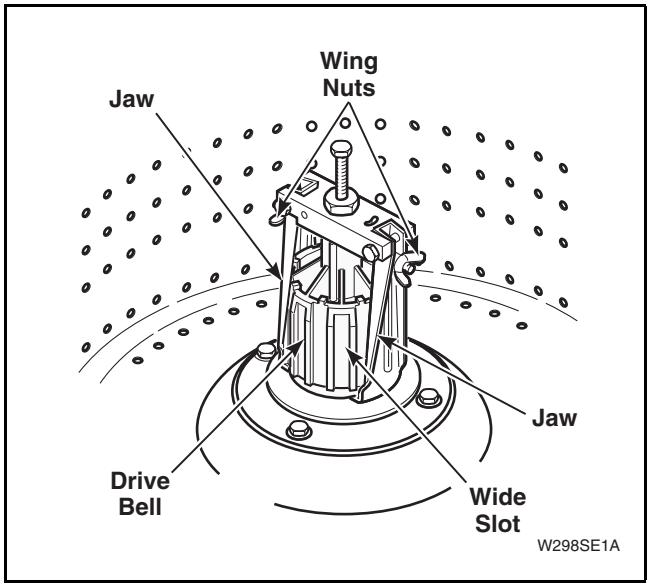

Figure 39

d. Place tool over drive bell, making sure indent on jaws line up with side slots on drive bell. Refer to *Figure 39*.
e. Thread bolt down through hole in top of drive bell until it bottoms out.
f. Place lip of each jaw under bottom edge of drive bell, making sure indent on jaws line up with wide slots on drive bell. Tighten wing nuts on tool to hold jaws firmly against drive bell. Refer to *Figure 39*.
g. Using an adjustable wrench, turn large nut on tool COUNTERCLOCKWISE to pull drive bell from transmission output shaft. Refer to *Figure 40*.

IMPORTANT: If large nut is turned clockwise when pulling drive bell, you will twist off the quarter inch bolt.

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WARNING

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- **Disconnect electric power to the washer before servicing.**
- **Never start the washer with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.**

W003

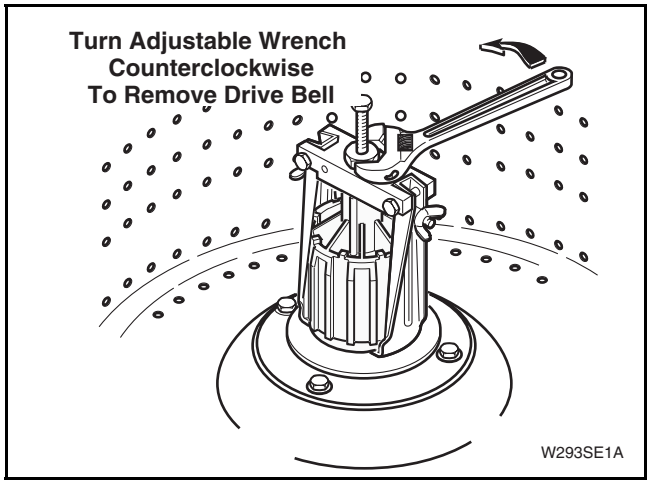

Figure 40

h. After drive bell has been pulled, remove tool and drive bell by turning quarter inch bolt out of transmission output shaft.
i. Loosen wing nuts and remove drive bell from tool.
j. Remove old seal from hub assembly by:
   (1) Placing a flat bladed screwdriver between bottom edge of seal and hub.
   (2) Using washtub bolts as a pry area, pop off lower seal bead.
   (3) Grasping bottom of seal, pull straight up freeing upper seal bead.

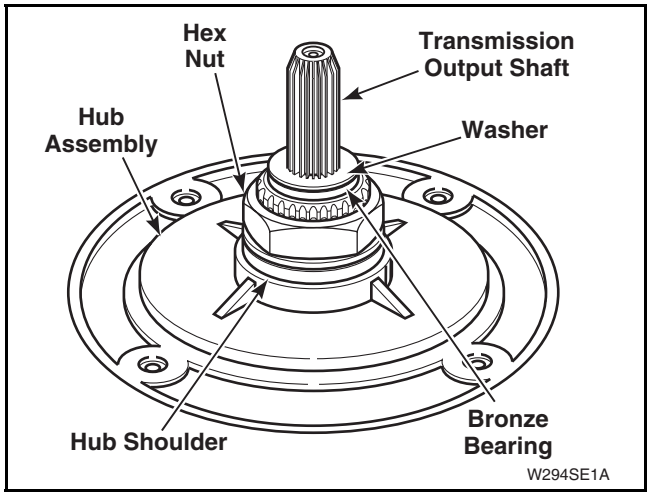

Figure 41

k. Thoroughly clean all foreign material from seal mounting area of hub assembly, bronze bearing and washer. Refer to *Figure 41*.
l. Lubricate new seal with liquid soap or soapy water to aid in assembly of seal onto hub. Refer to *Figure 42*.
m. Apply a small amount of supplied grease, No. 36765P, to inside sealing lips of seal. Refer to *Figure 42*.

IMPORTANT: DO NOT allow any lubricants to come in contact with outside surface of seal.

n. Apply remainder of supplied grease, Part No. 36765P, to exposed surface of washer between transmission output shaft and seal.

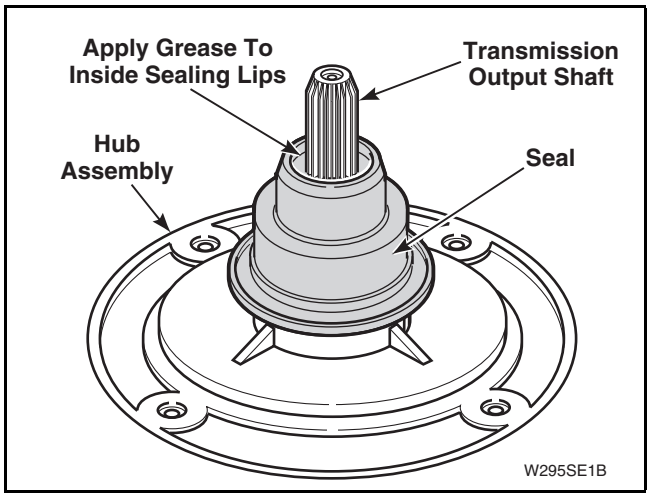

Figure 42

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WARNING

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W003

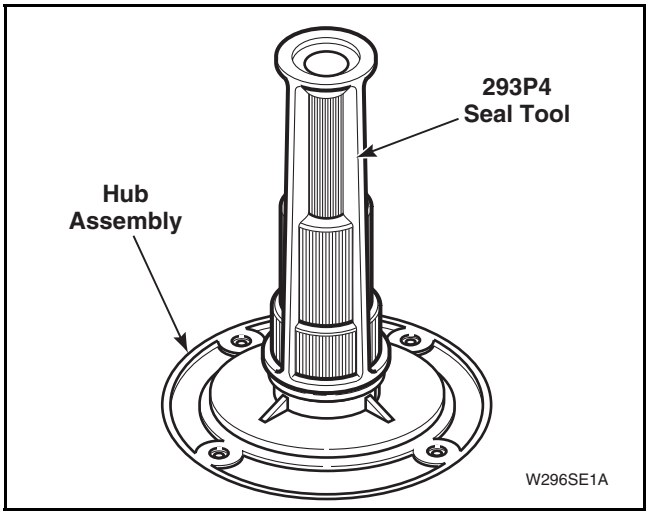

Figure 43

o. Place new drive bell seal onto hub and carefully push into position using large end of No. 293P4 Seal Tool. Refer to *Figure 43*.

IMPORTANT: Using a small pocket mirror, check entire circumference of bottom seal flange to make sure seal is pressed down against shoulder on hub; there should be no gap!

p. Turn the No. 293P4 Seal Tool upside-down and place the small end over transmission output shaft and onto the seal. Refer to *Figure 44*.

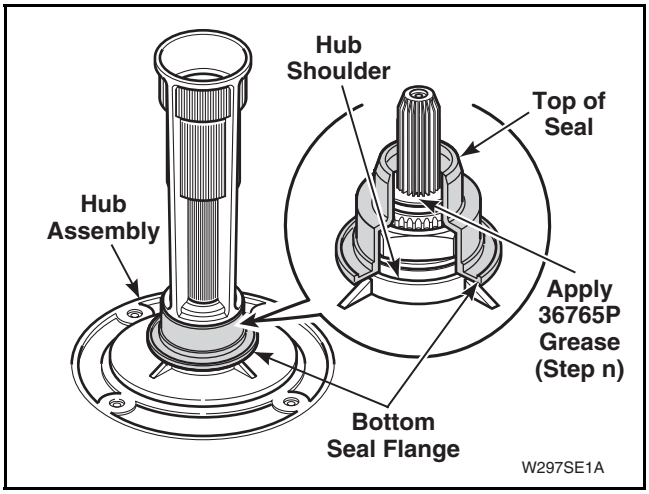

Figure 44

q. Push down on tool with a quick motion until it bottoms out and the top of seal is fully seated. Refer to *Figure 45*.

INSTALLING DRIVE BELL:

a. Position new drive bell over transmission output shaft. Rotate drive bell until splines in drive bell line up with splines on transmission output shaft.
b. Place No. 294P4 Bell Tool over top of drive bell. Screw bolt into transmission output shaft until it bottoms out.

NOTE: It is not necessary to clamp tool jaws on drive bell during this operation.

c. Using an adjustable wrench, turn large nut on tool **CLOCKWISE** to force drive bell down onto transmission shaft until drive bell bottoms out on shaft.
d. Turn quarter inch bolt out of transmission shaft and remove tool.
e. Place new o-ring onto new shoulder screw. Thread shoulder screw down through hole in top of drive bell and onto transmission shaft.

NOTE: Tighten new shoulder screw to approximately 60 to 80 inch-pounds.

f. Place new plug over hole in drive bell and firmly press into place using palm of your hand.

NOTE: It may be necessary to insert the end of a paper clip along side of plug as it is pressed into drive bell to release entrapped air.

IMPORTANT: When fully seated plug should not extend above drive bell more than 1/8 in. (3.2 mm).

g. Place agitator on top of drive bell. Slowly rotate agitator until fingers on underside of agitator line up with large slots on drive bell.
h. A sharp blow on top of agitator, with palm of your hand, will force agitator down onto drive bell, allowing fingers on underside of agitator to lock under bottom edge of drive bell.

NOTE: Do not push agitator onto drive bell any further than necessary.

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WARNING

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W003

46. OUT-OF-BALANCE SWITCH ASSEMBLY

a. Open control panel assembly. Refer to *Paragraph 31*.
b. Move switch lever off switch plunger, by moving lever back under cabinet top. Refer to *Figure 46*.
c. Place a thin piece of metal or paper in front of switch to keep screws from falling through holes in switch holder.
d. Using an 1/4 in. open-end wrench loosen tapping screws securing switch to switch holder. Refer to *Figure 45*.
e. Withdraw switch and screws from switch holder.
f. Insert tapping screws into holes in new switch.
g. Place a thin piece of metal or paper in front of switch to keep screws from falling through holes in switch holder.
h. Place switch and screws into switch holder. Refer to *Figure 45*.
i. Tighten tapping screws using an 1/4 in. open-end wrench.

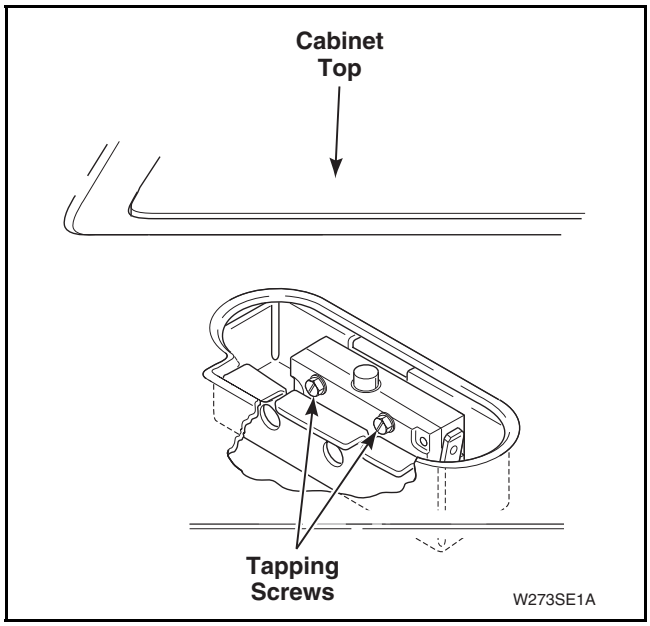

Figure 45

NOTE: Make sure switch is secure within holder by wigging it back and forth.

j. Reset switch lever by raising and lowering loading door.

NOTE: Make sure switch lever tab locates itself on top of switch plunger.

k. Reconnect wires to switch terminals.

NOTE: Refer to appropriate wiring diagram when rewiring switch.

l. Reinstall control panel assembly on control hood.

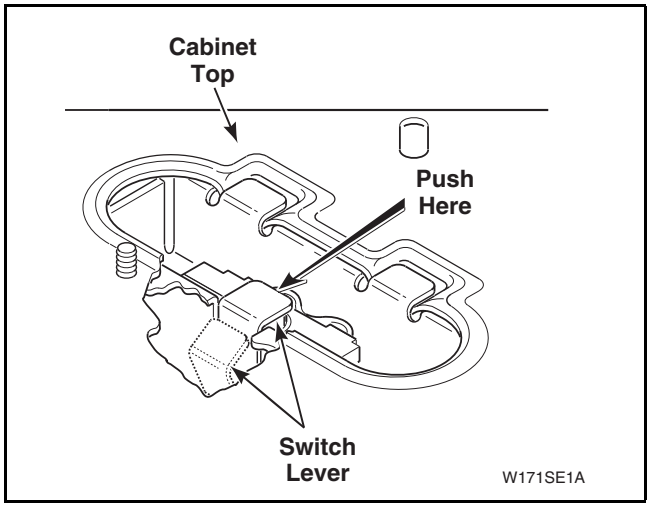

Figure 46

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WARNING

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W003

47. MIXING VALVE ASSEMBLY

a. Raise cabinet top assembly. Refer to *Paragraph 43*.

b. Remove two screws holding mixing valve to mounting bracket at rear of washer cabinet. Refer to *Figure 47*.

NOTE: When installing mixing valve, tab on bottom flange must be placed in positioning hole in mounting bracket.

c. Pull mixing valve out toward front of washer far enough to permit disconnecting water inlet and fill hoses from mixing valve. Refer to *Figure 47*.

d. Remove wires and quick disconnect blocks from mixing valve solenoid terminals. Refer to *Figure 47*.

NOTE: Refer to appropriate wiring diagram when rewiring solenoid.

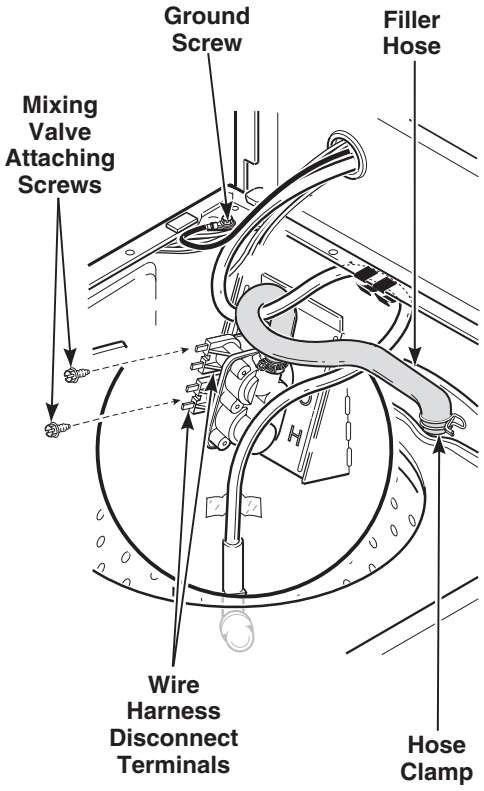

Figure 47

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WARNING

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W003

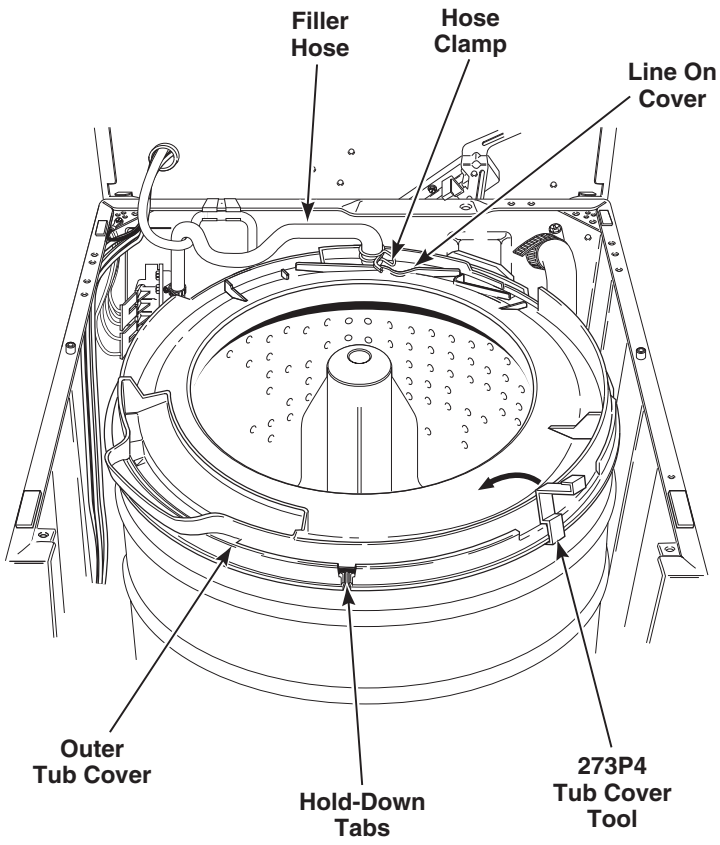

Figure 48

48. OUTER TUB COVER AND CLOTHES GUARD

a. Remove agitator. Refer to *Paragraph 42*.
b. Raise cabinet top. Refer to *Paragraph 43*.
c. Loosen hose clamp and remove filler hose from outer tub cover. Refer to *Figure 48*.

NOTE: When installing filler hose, white line on hose must be aligned with line located on top side of outer tub cover. Refer to *Figure 48*.

d. There are eight tub cover hold-down tabs which snap over the outer tub flange. Using special tub cover tool, Part No. 273P4, insert two prongs of tool underneath each side of tandem tabs. Refer to *Figure 48*. Tilt tool toward center of tub cover and at the same time lift upward on cover to unsnap hold-down tabs from outer tub flange. One by one, disengage each of the eight hold-down tabs from outer tub flange and remove cover.

IMPORTANT: When installing outer tub cover, always use a new cover gasket.

NOTE: Clean and remove any foreign material in gasket groove of outer tub cover and outer tub flange.

e. Lay gasket into gasket groove of tub cover. Refer to *Figure 49*.

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WARNING

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- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.**

W003

f. Using your fingers, press gasket down into gasket groove of tub cover. Avoid pressing gasket past ends of hold-down tabs.

IMPORTANT: Care must be taken not to twist or bunch gasket in any one area to avoid leaks after assembly.

g. Install gasket past ends of hold-down tabs to bottom of gasket groove using semi-curled end of tub cover tool Part No. 273P4.

NOTE: Tub cover tool Part No. 273P4 is designed to spread open hold-down tabs to prevent tearing of gasket during installation.

h. With tub cover tilted at approximately a 45 degree angle, insert the positioning pin into notch on outer tub flange. Refer to *Figure 50*.

i. Lower cover and push down firmly on top of hold down tabs until tabs snap over edge of outer tub flange.

j. Cross over to opposite side of tub cover and push down firmly on top of hold down tabs until tabs snap over edge of outer tub flange. Continue with this criss-cross pattern, until tub cover is fully seated. Visually check each tab area again to ensure cover is seated.

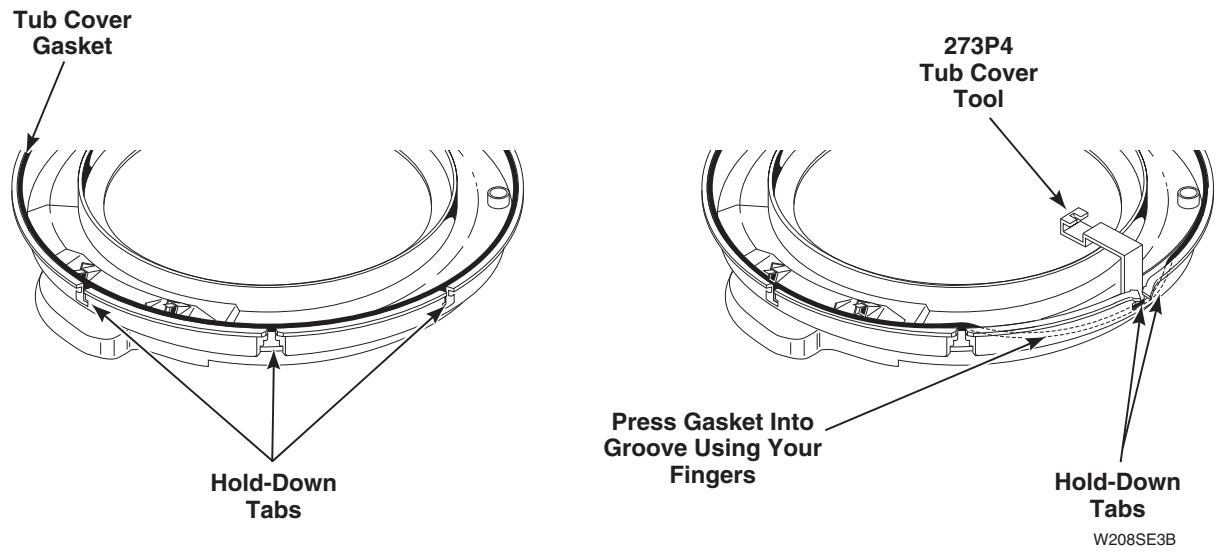

Figure 49

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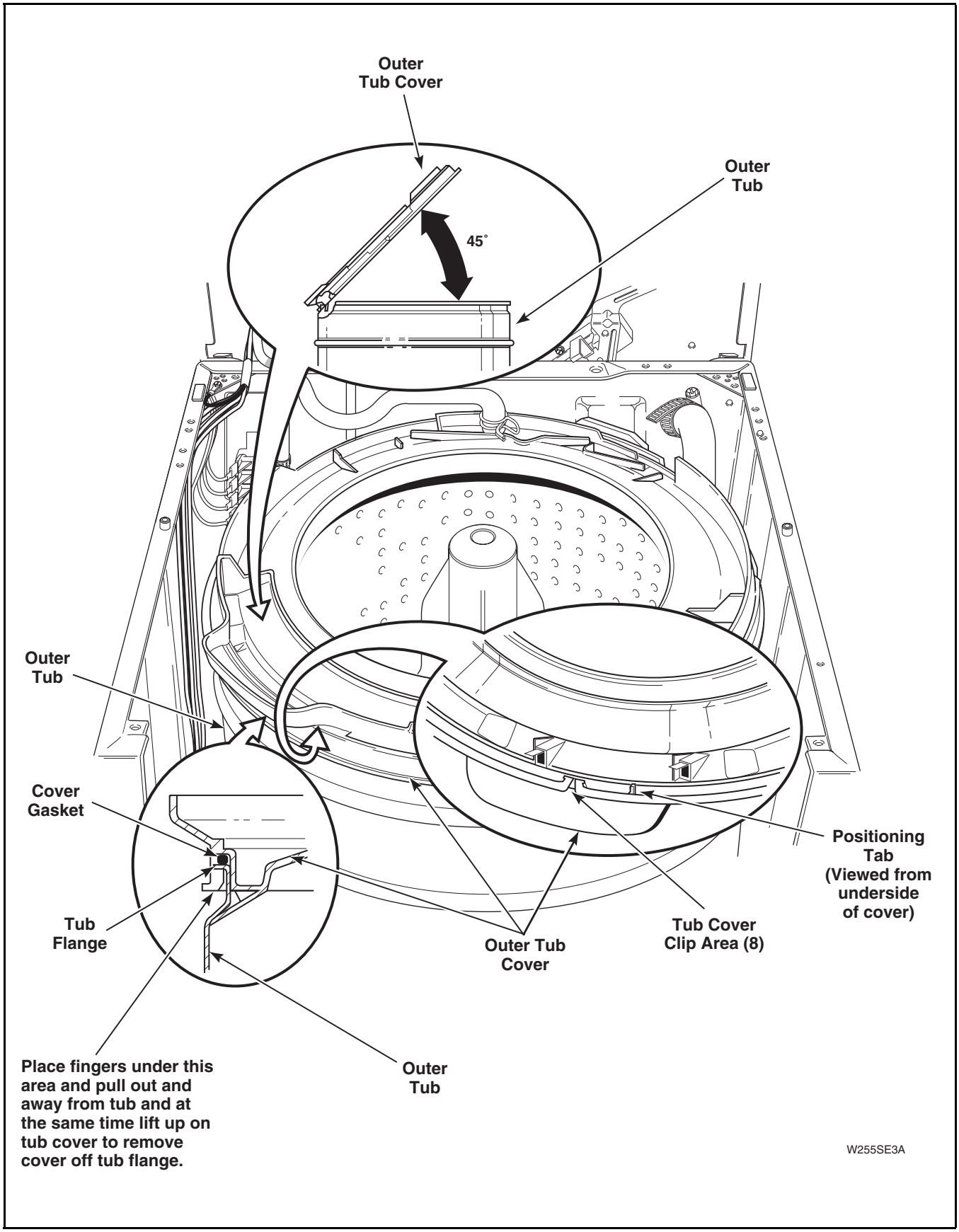

Figure 50

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WARNING

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- **Never start the washer with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.**

W003

k. Remove four screws and washers holding washtub to hub. Refer to *Figure 51*.

IMPORTANT: Porcelain Washtub Models — Use care when tightening screws to avoid chipping porcelain on washtub.

l. Lift washtub and clothes guard out of outer tub.

IMPORTANT: When removing washtub and clothes guard, DO NOT lift up on the clothes guard as you could damage it. Grasp top flange of washtub and remove from outer tub.

NOTE: When installing washtub, make sure all traces of old gasket are removed from bottom of washtub. When installing washtub, always use a new gasket between washtub and hub.

m. **Clothes Guard Removal:**
(1) Place blade of a small screwdriver into slots between clothes guard and washtub. Refer to *Figure 51*.
(2) Carefully pry pins of clothes guard out of holes in washtub. Refer to *Figure 51*.

NOTE: As you are prying out pins, lift up on clothes guard.

(3) Pry pins out of washtub holes approximately half way around tub before clothes guard can be removed.

n. **Clothes Guard Installation:**
Place clothes guard on top of washtub, making sure clothes guard pins line up with holes in washtub. Then carefully push clothes guard down into washtub until all pins snap into their respective holes.

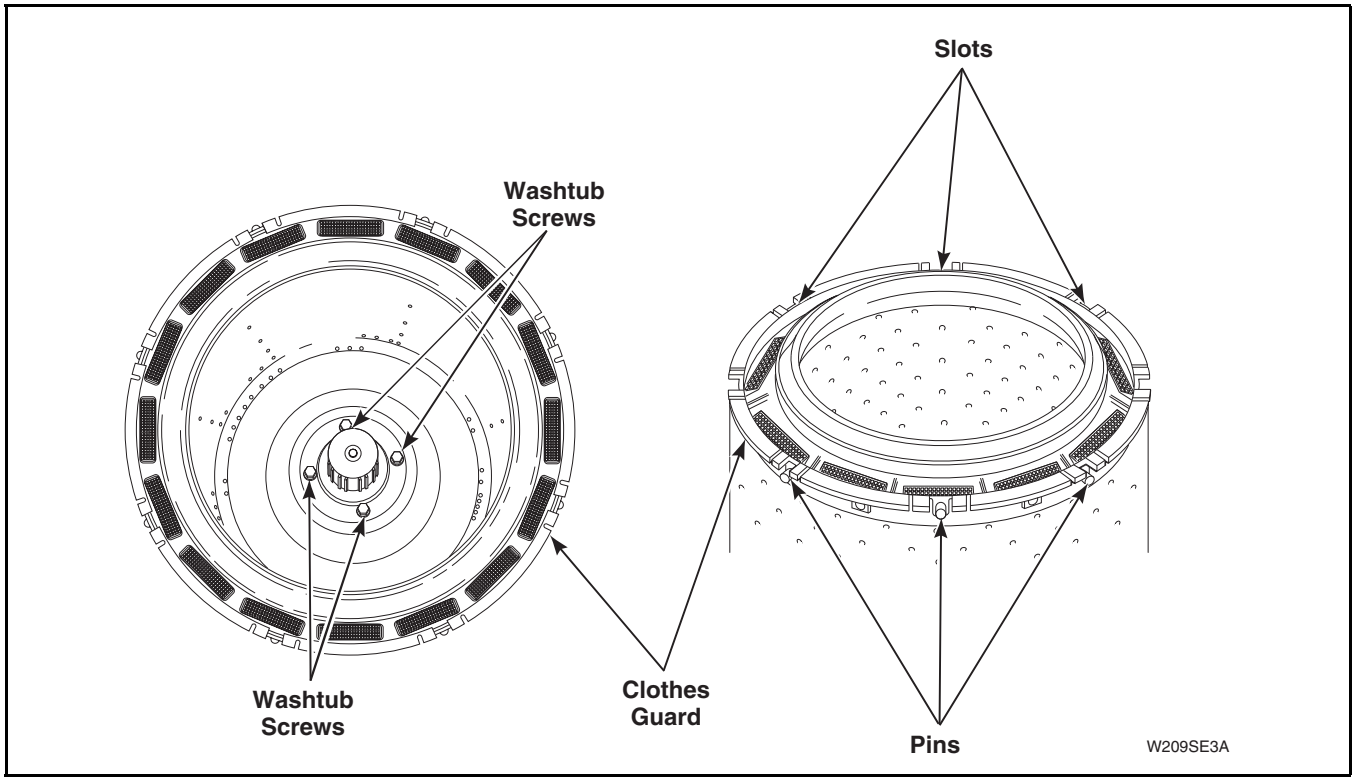

Figure 51

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WARNING

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- **Never start the washer with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.**

W003

49. HUB AND SEAL KIT, NO. 495P3

IMPORTANT: If water is present in washtub, spin and pump out before removing drive bell.

a. Remove front panel. Refer to *Paragraph 37*.
b. Remove drive bell and seal. Refer to *Paragraph 45*.
c. Remove outer tub cover and clothes guard. Refer to *Paragraph 48*.
d. Remove large hex nut, using No. 306P4 Hex Wrench.
e. Remove and discard spline insert from transmission tube.

IMPORTANT: Use the new spline insert (supplied in kit) when reinstalling large hex nut. DO NOT reuse an old spline insert because the large hex nut may loosen during washer operation.

f. Remove hub assembly from splines on transmission tube.

NOTE: A gear puller may be necessary to remove hub assembly.

g. Remove water seal from outer tub.

IMPORTANT: Use caution when removing seal so as not to damage outer tub flange or porcelain finish.

h. Lubricate inner splines of new hub assembly (supplied in kit) with No. 27604P Anti-Seize Compound.
i. Carefully place new hub assembly on splined transmission tube.

IMPORTANT: Firmly push hub assembly down against outer tub seal and hold in this position during the next three steps.

INSTALLING HUB AND SEAL KIT:

a. Thoroughly clean all foreign material from inner surface of outer tub flange.

IMPORTANT: All foreign material must be removed from inner surface of outer tub flange before installing No. 495P3 Hub and Seal Kit.

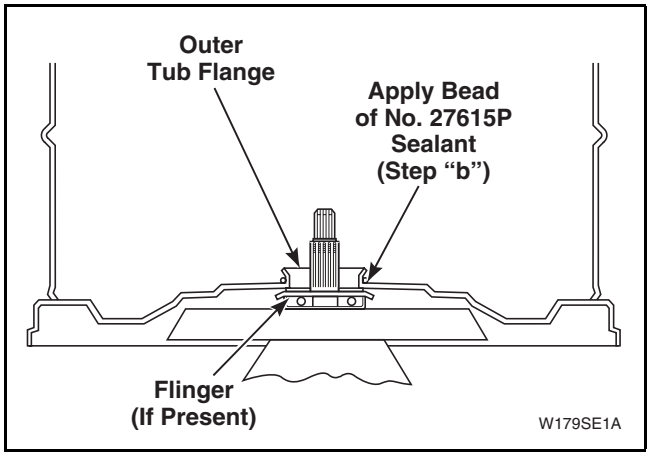

Figure 52

b. Apply a small amount of No. 27615P Sealant (supplied in kit) around outer surface of tub flange. Refer to *Figure 52*.

IMPORTANT: DO NOT allow sealant to come in contact with flinger, (if present), since this could prevent flinger from keeping moisture out of upper bearing. Refer to *Figure 52*.

c. Apply a light film of non-staining petroleum jelly (such as Vaseline®) to bronze portion of water seal and to outer surface of stainless steel sleeve. Refer to *Figure 53*.

IMPORTANT: DO NOT over lubricate!

d. Insert stainless steel sleeve into water seal from bottom of water seal until stainless steel sleeve is flush with bronze portion of water seal. Refer to *Figure 53*.
e. Leaving garter spring on water seal, place new water seal over outer tub flange (with seal lip on outside of tub flange). Then press seal into tub flange opening using moderate finger pressure.
f. Carefully apply a small amount of No. 27615P Sealant (supplied with kit) around outer edge of water seal and tub (area located just below garter spring). Refer to *Figure 53*.

IMPORTANT: DO NOT allow sealant to contact sealing surface of water seal because it will cause a water leak.

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W003

g. While holding down hub assembly, place new spline insert (with fingers pointing upward) over transmission tube until it bottoms out on hub assembly.
h. Place large hex nut over transmission tube (with larger inside bevel toward spline insert) then finger tighten large hex nut.
i. Torque large hex nut between 40 to 70 foot pounds (54 to 95 Nm).

NOTE: If torque wrench is not available, place No. 306P4 hex wrench over large hex nut then tap hex wrench with a hammer until hub assembly turns or until large hex nut will no longer tighten.

j. To install No. 39122 washtub gasket, follow these steps:
   (1) Thoroughly clean all foreign material from seal surface area of hub and bronze bearing.
   (2) Apply a small amount of nonstaining petroleum jelly (such as Vaseline®) to both surfaces where gasket will contact hub assembly and bottom of washtub.
   (3) Carefully place No. 39122 washtub gasket (supplied in kit) on hub assembly.

NOTE: Ensure holes in gasket are aligned with holes in hub assembly and all traces of original washtub gasket are removed from bottom of washtub.

k. Grasp top flange of washtub and carefully lower washtub down onto gasket and hub assembly.

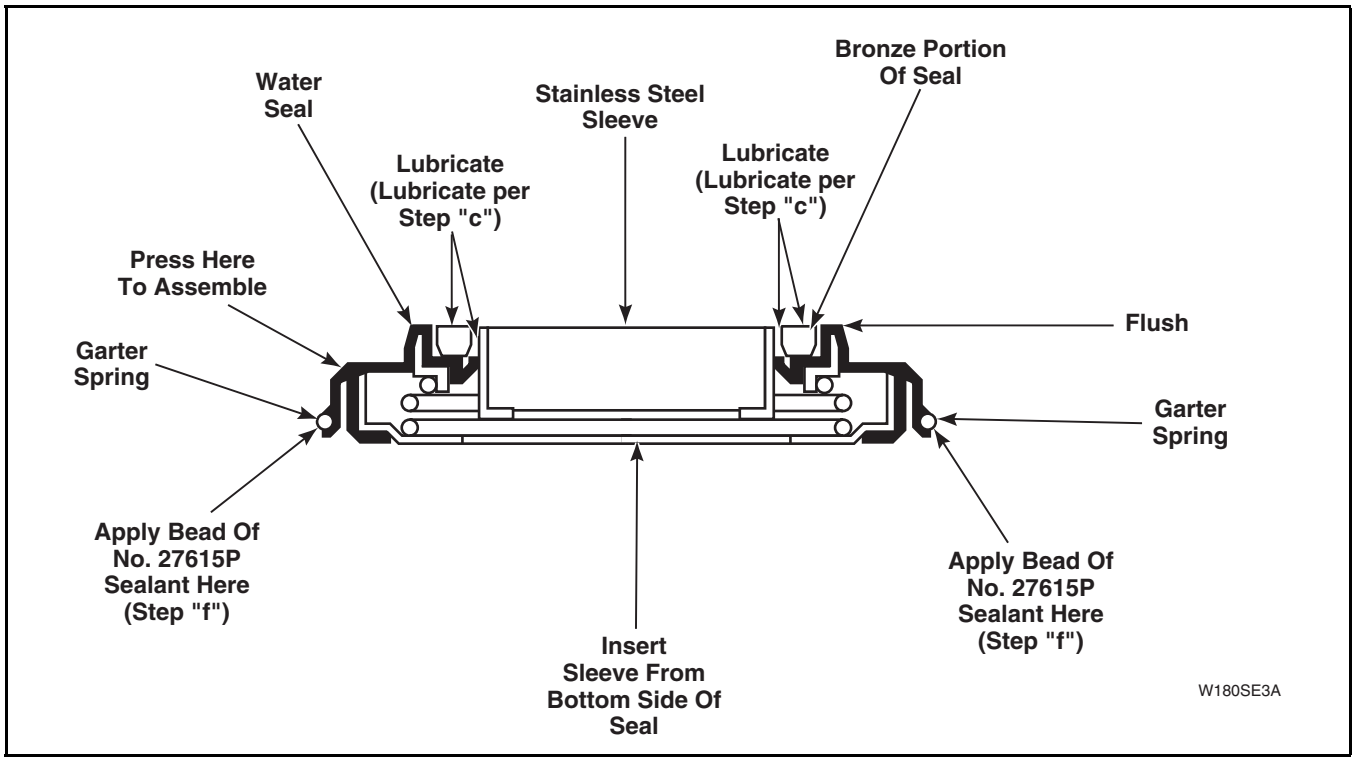
Bronze Portion Of Seal
Water Seal
Stainless Steel Sleeve
Lubricate (Lubricate per Step "c")
Lubricate (Lubricate per Step "c")
Press Here To Assemble
Garter Spring
Flush
Garter Spring
Apply Bead Of No. 27615P Sealant Here (Step "f")
Insert Sleeve From Bottom Side Of Seal
Apply Bead Of No. 27615P Sealant Here (Step "f")
W180SE3A

Figure 53

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W003

IMPORTANT: Before setting washtub into place, make sure holes in hub assembly are aligned with holes in gasket.

l. Secure washtub to hub assembly using four cap screws and four gaskets from 27202P Screw and Gasket Kit, (supplied in kit).

IMPORTANT: Porcelain Washtub Models - Use care when tightening cap screws to avoid chipping or damaging porcelain finish.

m. Install supplied outer tub cover gasket and outer tub cover. Refer to *Paragraph 48*.

IMPORTANT: When installing outer tub cover always use a new outer tub cover gasket.

n. Install drive bell and seal. Refer to *Paragraph 45*.
o. Reinstall agitator.
p. Reinstall cabinet top and front panel.
q. Close loading door, set washer timer to final spin, start washer and allow empty washtub to spin for 30 to 60 seconds.

IMPORTANT: Setting washer to spin allows petroleum jelly (applied to bronze portion of water seal) a chance to cover seal surface before water is added to washer.

50. OUTER TUB ASSEMBLY

a. Remove hub and seal kit. Refer to *Paragraph 49*.

NOTE: When reinstalling or replacing outer tub, always install a new No. 495P3 Hub and Seal Kit. Refer to *Paragraph 49*.

b. Reach in through front of motor mounting bracket and move idler lever to left to release tension on belt.

IMPORTANT: Use care when releasing idler lever tension. If idler lever spring is overstretched, washer operation will be affected.

c. While holding idler lever, reach in and around right side of motor and run belt off right side of pulley.

IMPORTANT: When removing or reinstalling complete outer tub into washer (with transmission, balance ring and pivot dome attached), damage could occur to idler lever if idler spring is left hooked to motor mounting bracket.

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- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.**

W003

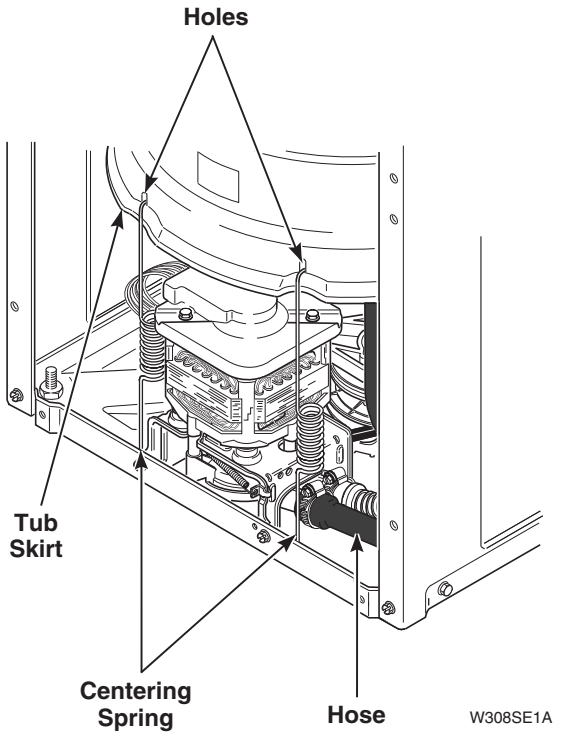

Figure 54

With idler spring hooked to motor mounting bracket, idler lever extends out through rear of bracket. When removing or reinstalling complete tub assembly, idler lever is in the way and can be damaged (bent), or idler pulley could be chipped. A bent idler lever will cause misalignment of idler pulley with drive belt, and a chipped idler pulley will damage belt.

We recommend that before removing or reinstalling the complete tub assembly, you unhook the idler spring and move the idler lever out of the way. This will prevent the possibility of idler lever or pulley damage.

d. Using No. 289P4 Spring Hook Tool, unhook seven centering springs from lower edge of outer tub skirt. Refer to *Figure 54*.

IMPORTANT: When installing centering springs, make sure spring hook is fully seated in hole in tub skirt. Mark the word "FRONT" on front side of outer tub so complete tub module can be reinstalled in same position.

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W003

e. Disconnect hose from bottom of outer tub.
f. Remove pressure hose from pressure bulb. Then remove tape holding pressure hose to outer tub. Refer to *Figure 62*.
g. Grasp outer tub and lift complete tub module assembly (with transmission, balance ring and pivot dome attached) straight up and out of washer cabinet.
h. Turn outer tub upside-down and set on protective padding.
i. Remove screws holding each support leg to outer tub. Refer to *Figure 55*. Then lift transmission, balance ring and pivot dome off tub.

NOTE: To prevent porcelain damage, leg plates must be installed on outside of outer tub flange when reinstalling support legs. Do not overtighten screws as this could cause stripping or porcelain damage. Tighten screws between 90 and 130 inch pounds.

j. Turn outer tub upright and remove pressure bulb and grommet.

NOTE: When installing grommet into outer tub, thicker lip of grommet must be installed to outside of tub. Lubricate outer surface of large opening of pressure bulb with liquid soap to aid when reassembling pressure bulb into grommet.

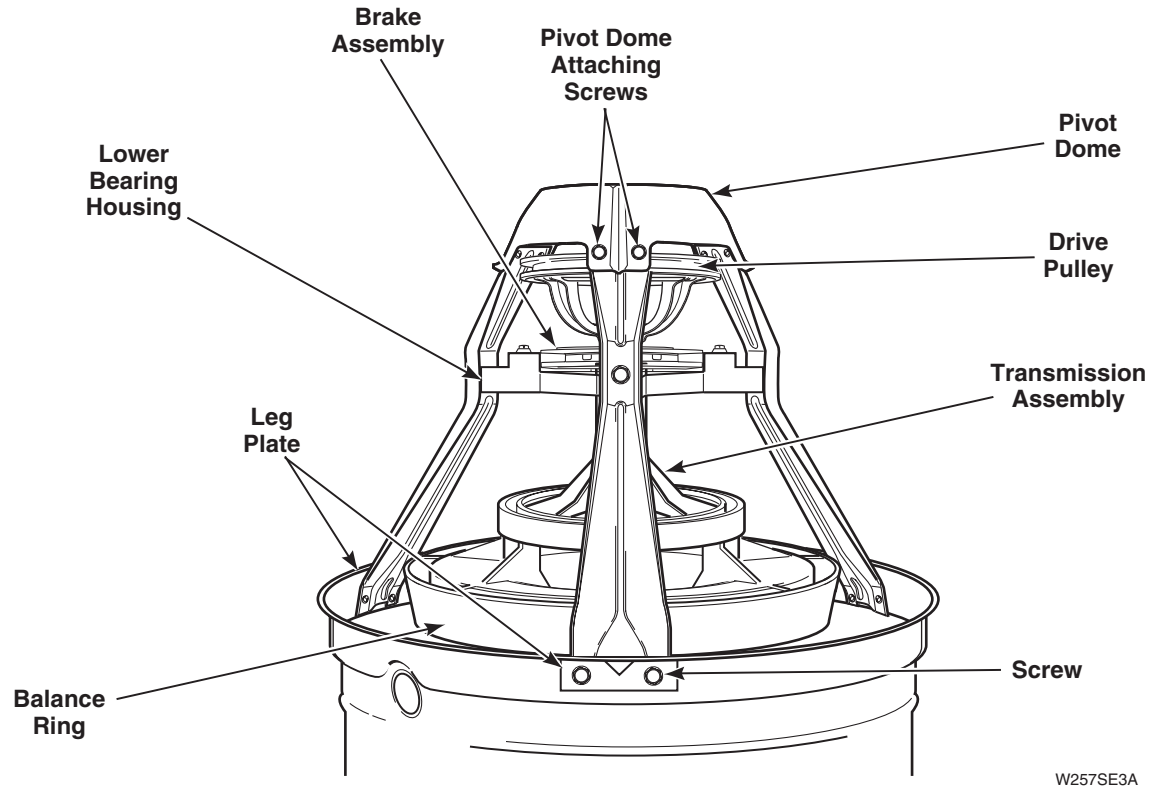

Figure 55

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W003

51. DRIVE PULLEY AND HELIX

a. Remove outer tub assembly from washer. Refer to *Paragraph 50*.
b. Remove cap screw, washer and helix holding drive pulley to input shaft of transmission assembly. Refer to *Figure 56*.
c. Lift drive pulley up and out from between tub support legs.

NOTE: When reinstalling pulley, place a small amount of lubricant to top side of drive pulley that will be contacting flat washers. Lubricate helix ramps and bore with a small amount of lubricant. Refer to *Figure 57*.

IMPORTANT: DO NOT OVER LUBRICATE! Excess lubricant can be thrown into pivot dome area during normal operation of washer. Any lubricant on pivot dome or isolator will cause premature tripping of the out-of-balance switch. This condition will persist until lubricant is removed.

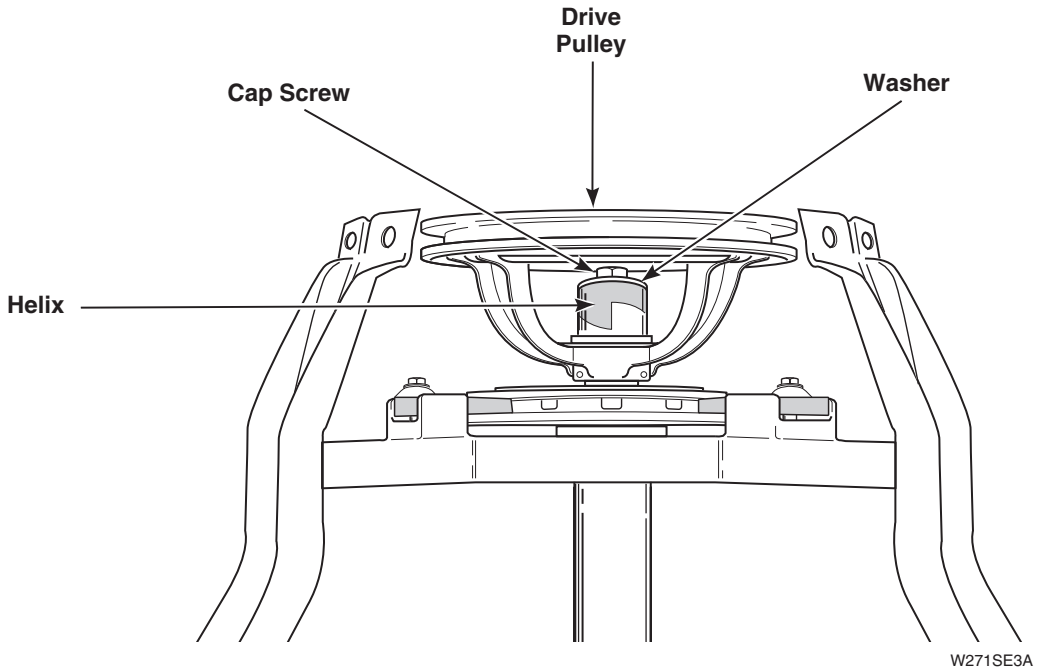

Figure 56

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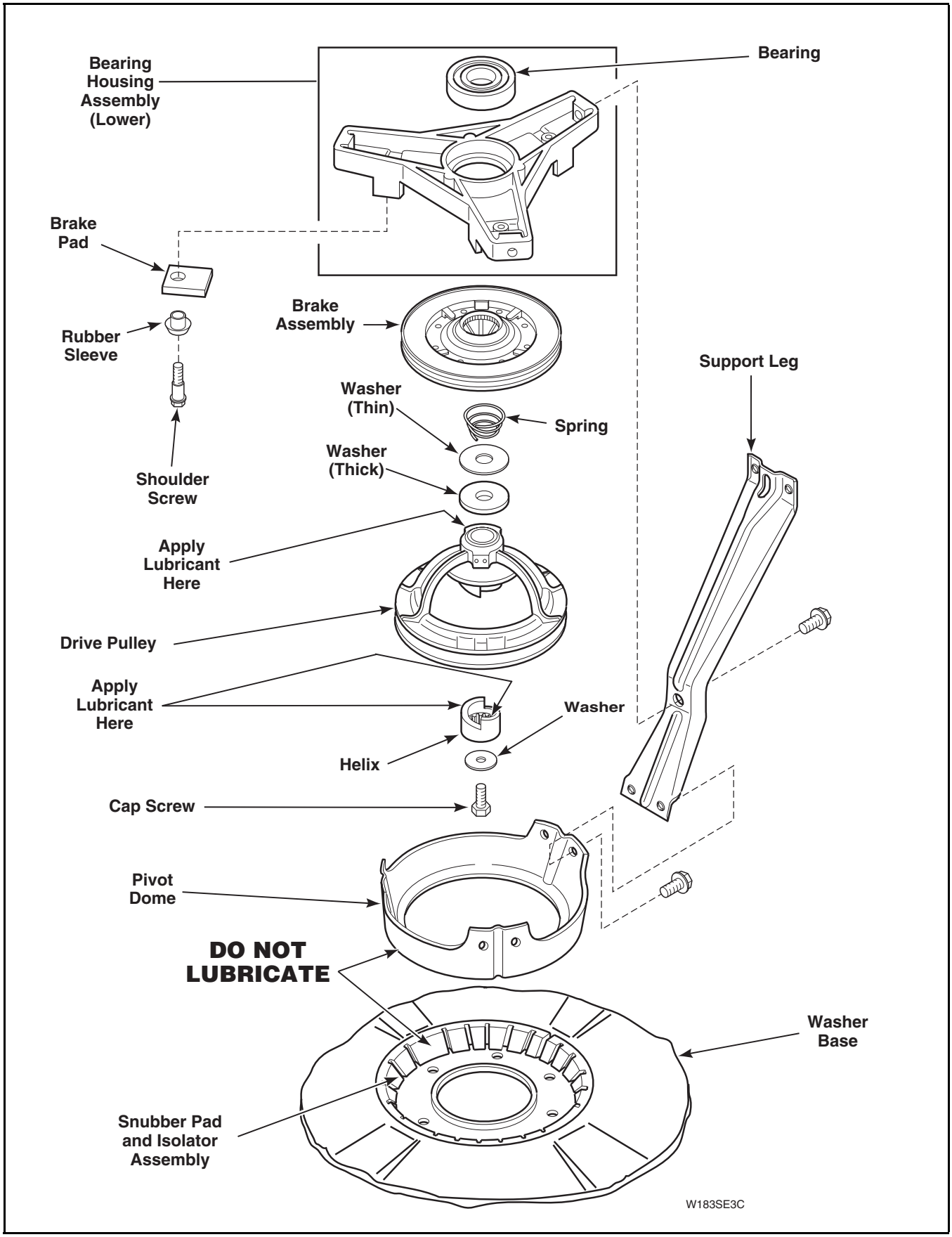

Figure 57

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WARNING

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W003

52. BRAKE ASSEMBLY

a. Remove drive pulley and helix from outer tub. Refer to *Paragraph 51*.

b. Remove two flat washers from transmission shaft. Refer to *Figure 57*.

IMPORTANT: Two large flat washers must be in place between spring and drive pulley when reassembling. Thicker washer must contact top side of drive pulley. Refer to *Figure 57* for assembly sequence.

c. Using a right angle needle nose pliers, remove spring from around lower transmission tube (located inside brake assembly). Refer to *Figure 57*.

NOTE: Remove spring by turning in a COUNTERCLOCKWISE direction (looking from lower end of input shaft of transmission assembly).

d. Remove three screws holding brake pads, rubber sleeves and brake assembly to lower bearing housing, then remove brake assembly and pads off bottom of transmission assembly. Refer to *Figure 57*.

IMPORTANT: When reinstalling brake assembly, we recommend replacing brake pads. DO NOT replace just the worn pads. Apply a small amount of No. 26594P Silicone Lubricant to both sides of each brake pad where it will contact brake assembly.

IMPORTANT: DO NOT OVER LUBRICATE! Excess lubricant can be thrown into pivot dome area during normal operation of washer. Any lubricant on pivot dome or snubber pad and isolator assembly will cause premature tripping of the out-of-balance switch. This condition will persist until lubricant is removed.

NOTE: Refer to *Figure 57* for assembly sequence.

IMPORTANT: When installing spring, make sure it is inserted into groove in large splines of lower transmission tube. Use tool, No. 242P4, for installing spring.

e. After brake is installed, put washer through the following check to make sure brake is operating properly.
   (1) Turn off electrical power to washer.
   (2) Turn drive pulley one complete revolution in agitation direction, then push drive pulley up against brake.
   (3) Check for a .030 minimum gap between drive pulley and **helix** ramp surfaces.

IMPORTANT: If gap is less than .030, brake may not stop washtub from spinning in the required seven seconds because brake will not close properly.

   (4) Turn on electrical power to washer and start washer in final spin.

NOTE: After washtub has been spinning for two minutes, spin speed should be approximately 580 RPM. If not, the cause could be dragging brake pads. If problems occur with steps 3 or 4, remove brake assembly and correct problem.

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W003

53. LOWER BEARING HOUSING

a. Remove brake assembly from outer tub. Refer to *Paragraph 52*.
b. Remove three screws holding lower bearing housing to tub support legs. Refer to *Figure 57*.
c. Rotate bearing housing past legs, then carefully lift bearing housing off transmission tube.

NOTE: It may be necessary to loosen one leg from outer tub to rotate housing. Tap lightly on housing to loosen it from transmission tube.

IMPORTANT: When installing lower bearing housing, apply No. 27604P Anti-Seize Compound to area of transmission tube that will be contacting bearing. Refer to *Figure 58*.

BEARING REMOVAL:

a. Support bearing housing around outside diameter of bearing opening and carefully press bearing out of housing.
b. Clean all foreign material from inner diameter of bearing opening.
c. Clean any foreign material from outside diameter of new bearing.
d. Apply a retaining compound (such as Loctite) to outside diameter of new bearing and carefully press new bearing into housing (with sealed side facing up).

IMPORTANT: Press new bearing into housing by pressing on outer race of bearing only, and press until bearing bottoms out in housing.

54. TRANSMISSION ASSEMBLY

a. Remove lower bearing housing from outer tub. Refer to *Paragraph 53*.

NOTE: It may be necessary to tap lightly on bearing housing to loosen it from transmission tube.

IMPORTANT: When installing lower bearing housing, pivot dome and brake assembly, apply No. 27604P Anti-Seize Compound to area of transmission tube that will be contacting bearing. Refer to *Figure 58*.

To prevent porcelain damage, leg plates must be installed on outer tub flange when reinstalling support legs. (The plates must be installed on outside of tub flange.) Do not overtighten screws as this could cause stripping or porcelain damage. Torque screws between 90 to 130 inch pounds (10 to 15 Nm).

b. Remove four screws and lockwashers holding transmission assembly to balance ring and lift transmission assembly straight up and out of balance ring and upper bearing. Refer to *Figure 58*.

IMPORTANT: When replacing or reinstalling transmission assembly, it is important that No. 27604P Anti-Seize Compound be applied to area of the transmission tubes where they will be contacting upper and lower bearings. Refer to *Figure 58*.

When reinstalling transmission assembly, note, if there is a mark located on outer edge of balance ring, this mark (if present) indicates the light side of ring. This light side must be installed at a 9 o'clock position with center of rack at 12 o'clock when viewed from top of transmission. Refer to *Figure 58*. Carefully lower transmission through balance ring and upper bearing. DO NOT DROP OR LOWER TRANSMISSION ASSEMBLY INTO POSITION TOO HARD, this can cause bearing to move within bearing housing which will cause vibration, noise, wear or no spin.

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W003

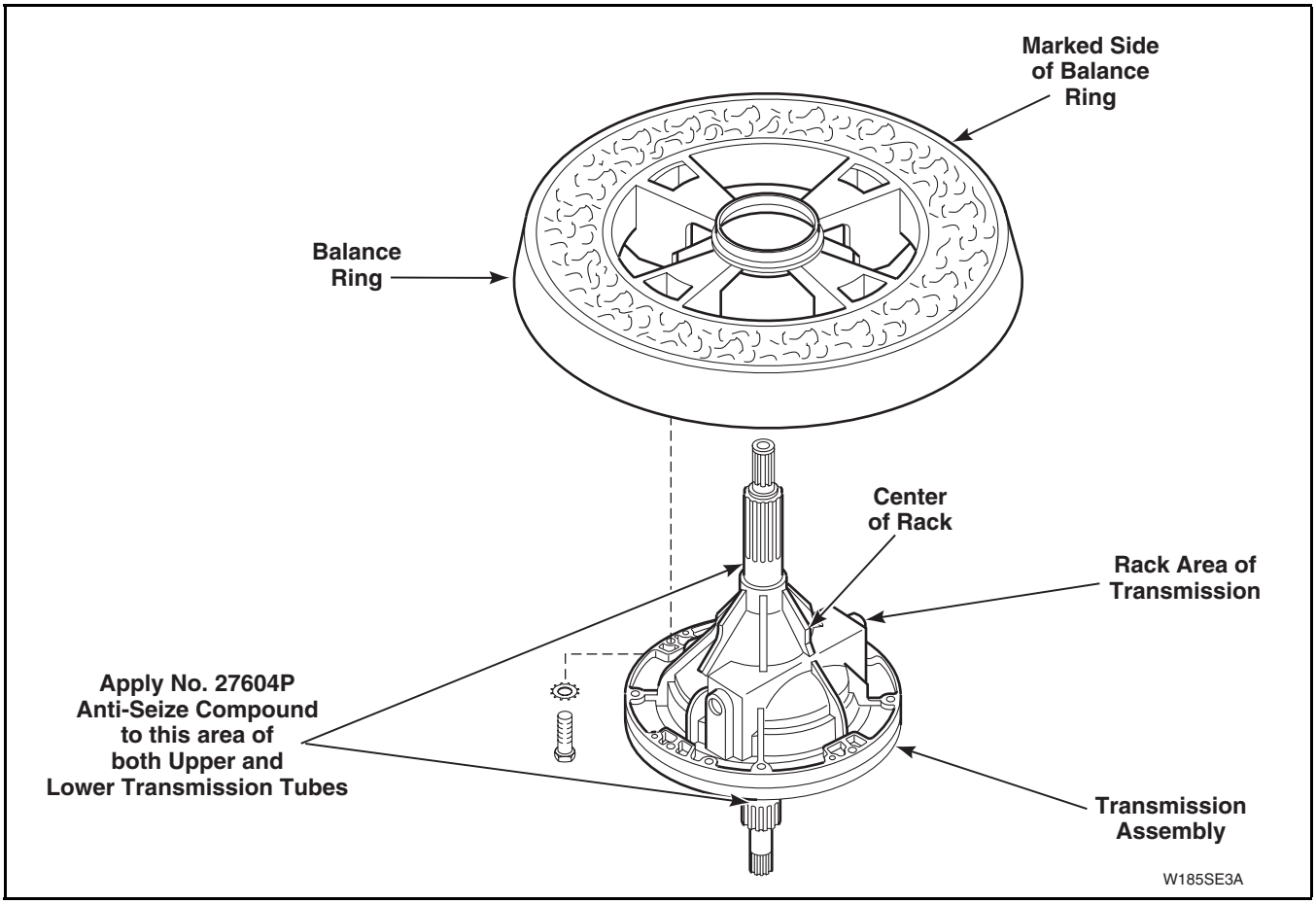
Marked Side of Balance Ring
Balance Ring
Center of Rack
Rack Area of Transmission
Apply No. 27604P Anti-Seize Compound to this area of both Upper and Lower Transmission Tubes
Transmission Assembly
W185SE3A

Figure 58

TRANSMISSION DISASSEMBLY:
Refer to *Figure 59* for assembly sequence.

a. Place transmission in a vise with input shaft end up. Clamp only the case, not the shaft.

NOTE: Supporting transmission in this manner will allow oil to collect in transmission case.

b. Before disassembling transmission halves, mark outer edge of transmission case and cover so the two can be reassembled in the same position.

c. Place transmission in vise so three of the eight screws holding transmission case and cover together are in the twelve, four, and seven o'clock positions.

d. Loosen three screws, mentioned in step "c", approximately two turns. DO NOT remove these three screws at this time. Remove remaining five screws and lockwashers completely.

e. Remove transmission assembly from the vise.

f. While holding transmission by cover end, gently tap each of the three remaining screws until the two halves separate. Place assembly back into vise (cover end up) and remove three screws and lockwashers.

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W003

g. Remove screw and washer holding reduction gear to transmission cover and remove gear.
h. Remove special screw, lockwasher and flat washer holding drive pinion to input shaft.

NOTE: To prevent input shaft from turning during removal of special screw, place an old helix onto shaft and hold helix with a locking pliers.

i. Remove drive pinion from input shaft using a hammer and punch to drive shaft out of pinion.
j. Remove input shaft from transmission cover.

IMPORTANT: Carefully examine area inside cover tube (seals, bearing, roller clutch, etc.). If oil is present between seals and bearing, or roller clutch is bad, it will require replacing complete transmission cover assembly. Individual components are not available separately.

k. Remove internal gear, slide and rack from transmission case.
l. Remove transmission case from vise and drain the oil.
m. Remove retainer ring from output shaft.
n. Using a hammer and punch, carefully drive shaft out of agitator pinion.
o. Carefully remove output shaft and washer from transmission case.

IMPORTANT: Carefully examine area inside transmission case tube (seals, bearings, etc.). If oil is present between seals and bearings, it will require replacing complete transmission case. Seals and bearings are not available separately.

TO REASSEMBLE TRANSMISSION ASSEMBLY

IMPORTANT: Wash all components in a cleaning solution (mineral spirits). Wipe inside of transmission case and cover with a clean cloth, dampened with cleaning solution, to remove any impurities. DO NOT allow cleaning solution to come in contact with bearings and seals in transmission case and/or cover.

a. Carefully insert output shaft and washer into transmission case.
b. Place agitator pinion on splines of output shaft and press onto shaft.
c. Install retainer ring on output shaft.
d. Place transmission case into a vise. Clamp only the case, not the shaft.
e. Place rack inside transmission case with rack resting on bar in case. Agitator pinion must engage the rack.

NOTE: Put a light film of transmission oil on bar where the rack will slide back and forth.

f. Position slide in slot on rack.

NOTE: Put a light film of transmission oil in slot on rack, also, transmission case where internal gear will ride.

g. Place internal gear into transmission case. Make sure guide pin on internal gear fits in hole on slide.

IMPORTANT: Never install a used internal gear in a new transmission case. If transmission case and internal gear are to be reused, be sure they are used as an original set.

h. Refill transmission case with new No. 27243P Transmission Oil (one fill).
i. To prevent seal damage, insert input shaft into cover starting at outer end of cover tube.

IMPORTANT: End of shaft with identification groove, must be facing outward. This is the end that will mate with helix. Refer to *Figure 59*.

j. Install drive pinion, flat washer, lockwasher and special screw onto input shaft.

NOTE: Use a thread locking compound on threads of special screw to prevent screw from loosening on shaft.

IMPORTANT: Be sure mating surfaces of transmission cover and case are free of oil or any other foreign material.

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W003

k. Place reduction gear on stub shaft of cover and install screw and washer.
l. Apply a bead of sealant, No. 37577P sealant, (or permatex ultra blue) on mating surface of transmission case.

IMPORTANT: Bead of sealant should be no more than one sixteenth inch in diameter. DO NOT allow any sealant to contact edges of internal gear (sealer may damage moving parts).

m. Carefully place transmission cover over top of transmission case. Make sure holes in cover line up with holes in case, and marked edges of two halves are aligned.
n. Carefully lower cover onto case.
o. Secure two transmission halves together, using eight screws removed during disassembly. Tighten eight screws evenly.
p. Remove complete transmission assembly from vise.
q. Apply anti-seize compound, No. 27604P, to smooth area of both transmission tubes that will be contacting upper and lower bearings. Refer to *Figure 58*.

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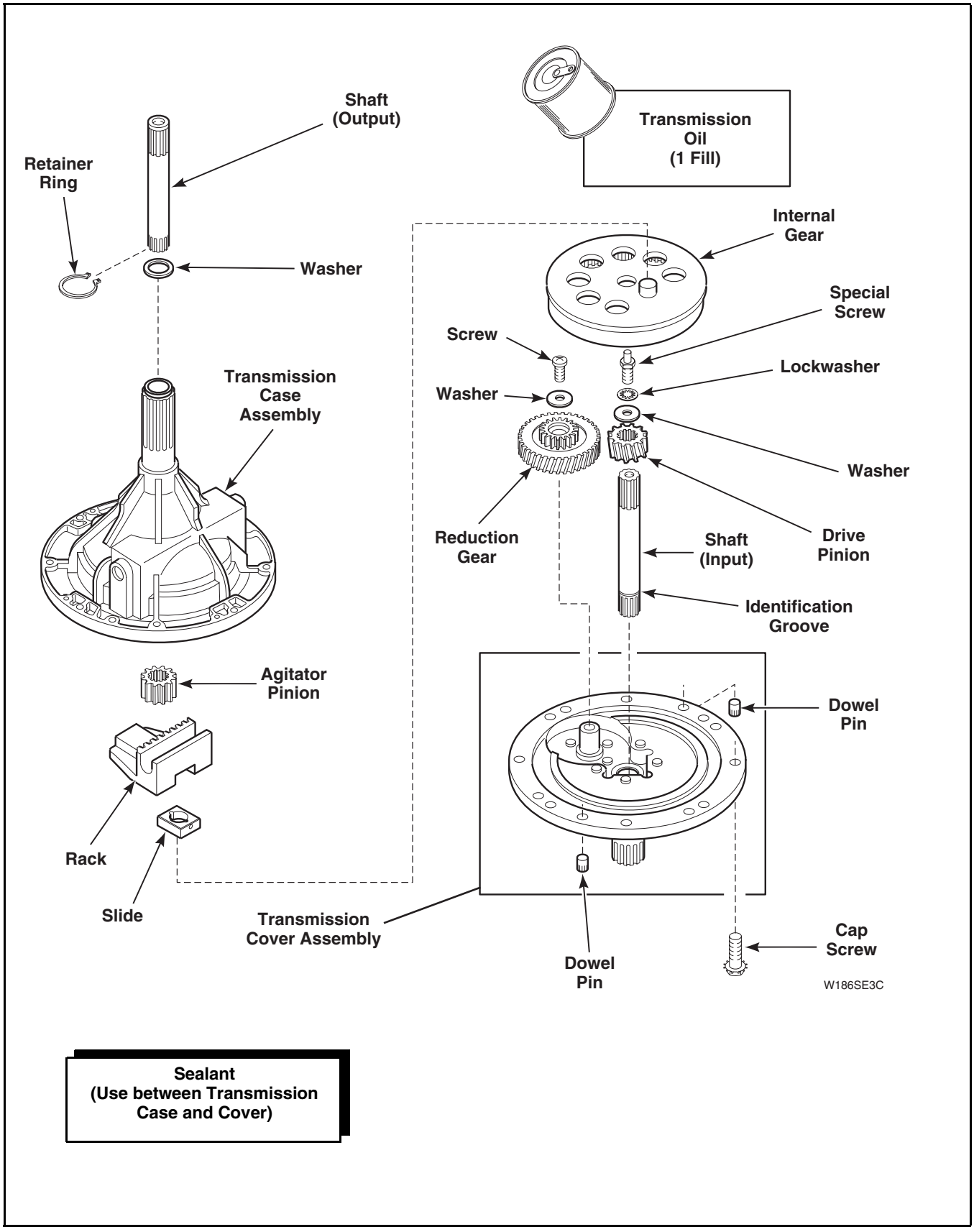

Figure 59

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W003

55. BALANCE RING

a. Remove transmission assembly. Refer to *Paragraph 54*.
b. Lift balance ring off outer tub.

IMPORTANT: When reinstalling balance ring, note, if there is a mark located on outer edge of balance ring, this mark (if present) indicates light side of ring. This light side must be installed at a 9 o'clock position with center of rack at 12 o'clock when viewed from top of transmission. Refer to *Figure 58*.

56. UPPER BEARING ASSEMBLY

a. Remove transmission assembly. Refer to *Paragraph 54*.
b. Remove screws holding each support leg to outer tub. Refer to *Figure 55*.
c. Lift complete pivot dome (with drive pulley, brake assembly, lower bearing housing, transmission assembly, and balance ring attached) off outer tub.

IMPORTANT: To prevent porcelain damage, leg plates must be installed on outer tub flange when reinstalling support legs. (Plate must be installed on the outside of tub flange). Do not overtighten screws as this could cause stripping or porcelain damage.

d. Remove three screws holding upper bearing and housing to bottom of outer tub. Refer to *Figure 60*.

NOTE: Replace bearing and housing as an assembly, and make sure flinger (if present) is properly positioned between outer tub and bearing assembly. Refer to *Figure 60*.

NOTE: When reinstalling upper bearing assembly, applying a retaining compound (such as Loc-Tite) to threads of cap screws.

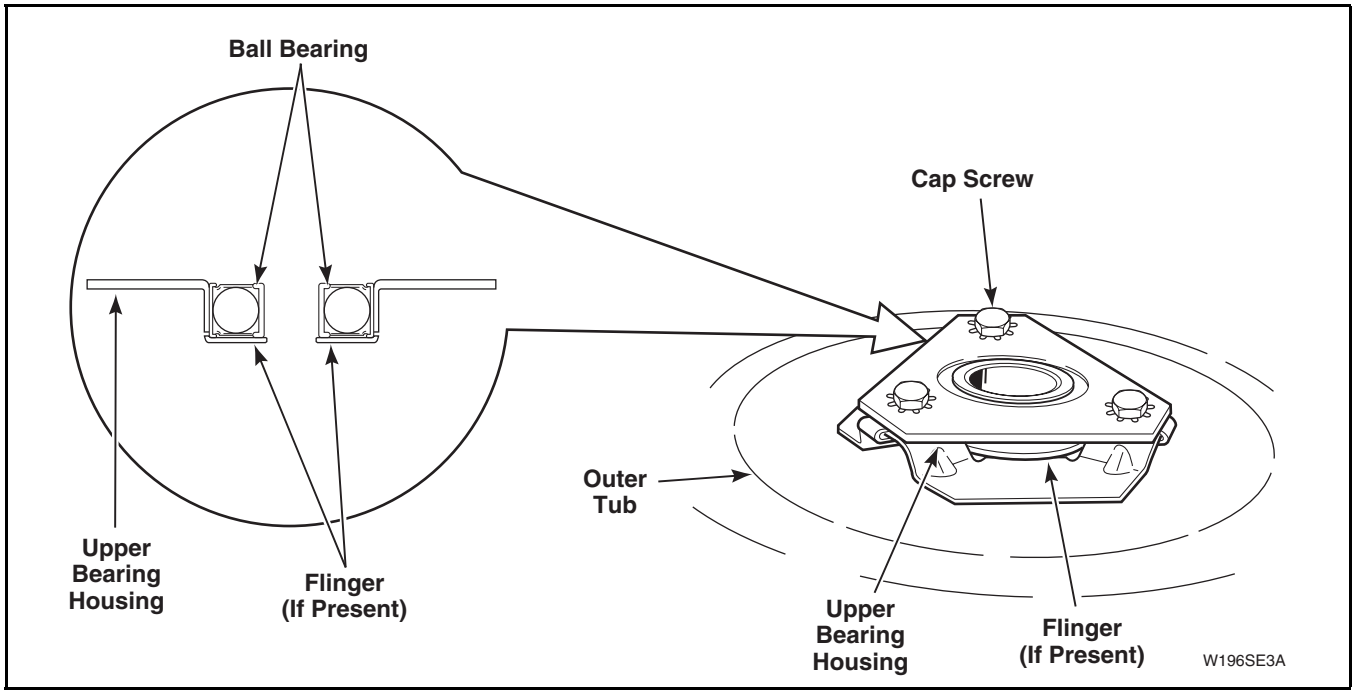

Figure 60

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W003

57. SNUBBER PAD AND ISOLATOR ASSEMBLY

a. Remove outer tub. Refer to *Paragraph 50*.

b. Locate split end of snubber pad and isolator assembly strip and using a flat blade screwdriver, carefully unsnap snubber pad and isolator assembly from pivot dome area of washer base. Refer to *Figure 61*.

SNUBBER PAD AND ISOLATOR ASSEMBLY INSTALLATION:

a. Starting at elongated hole in pivot dome area of washer base, place one end of snubber pad and isolator assembly into elongated hole, then snap pins on snubber pad and isolator assembly into their respective holes in the base. It may require shifting snubber pad and isolator assembly to get two ends of strip to meet in area of elongated hole.

IMPORTANT: DO NOT apply any lubricant to surface of snubber pad and isolator assembly or pivot dome. Any lubricant on pivot dome or isolator will cause premature tripping of the out-of-balance switch.

b. Clean surface of pivot dome. Then carefully place tub module back into washer making sure pivot dome is positioned properly in dome recess of washer base.

NOTE: Make sure the word "FRONT" (on outer tub) is facing toward front of washer.

c. Use No. 321P4 Spring Hook Tool and starting with rear springs, hook seven centering springs into lower edge of outer tub skirt. Refer to *Figure 54*.

IMPORTANT: When installing centering springs, make sure spring hook is fully seated in hole in tub skirt. Refer to *Figure 54*.

d. Connect hose to bottom of outer tub, tighten hose clamp.

e. Reconnect idler spring to clip on motor mounting bracket.

f. Place drive belt on motor pulley, reach around right side of motor, starting with belt on right side of large pulley, run belt onto large pulley.

g. Route the pressure hose as shown in *Figure 62*. Then route pressure hose back up through hole in cabinet top.

h. Reconnect filler hose to tub cover. Refer to *Figure 48*.

NOTE: When reinstalling filler hose, white line on hose that connects to tub cover must be aligned with line located on top side of outer tub cover. Refer to *Figure 48*. Make sure hose is in its natural position (not kinked or twisted). If it is not, loosen hose clamp and straighten hose.

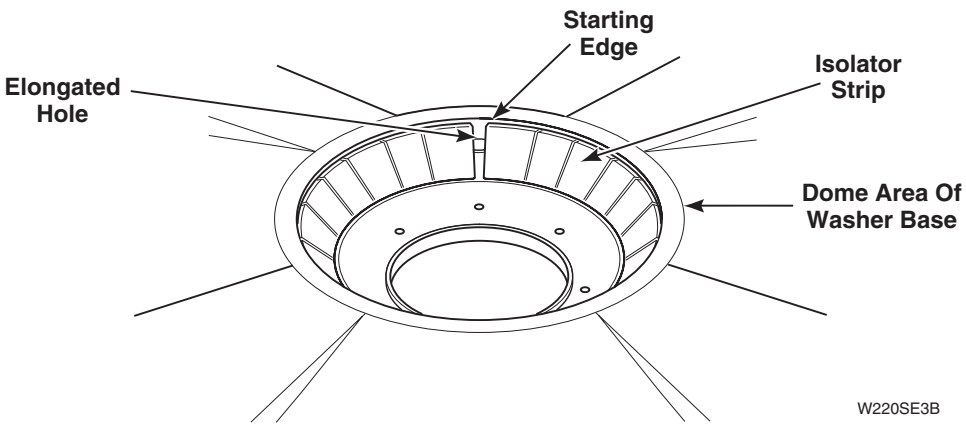

Figure 61

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WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:
- **Disconnect electric power to the washer before servicing.**
- **Never start the washer with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.**

W003

i. Reinstall cabinet top.
j. Remove control panel, reconnect pressure hose to pressure switch. Then reinstall control panel.
k. Reinstall washer front panel.
l. Reconnect washer power cord and open water supply valves.

NOTE: Washer must be run through a complete cycle to make sure it is operating properly.

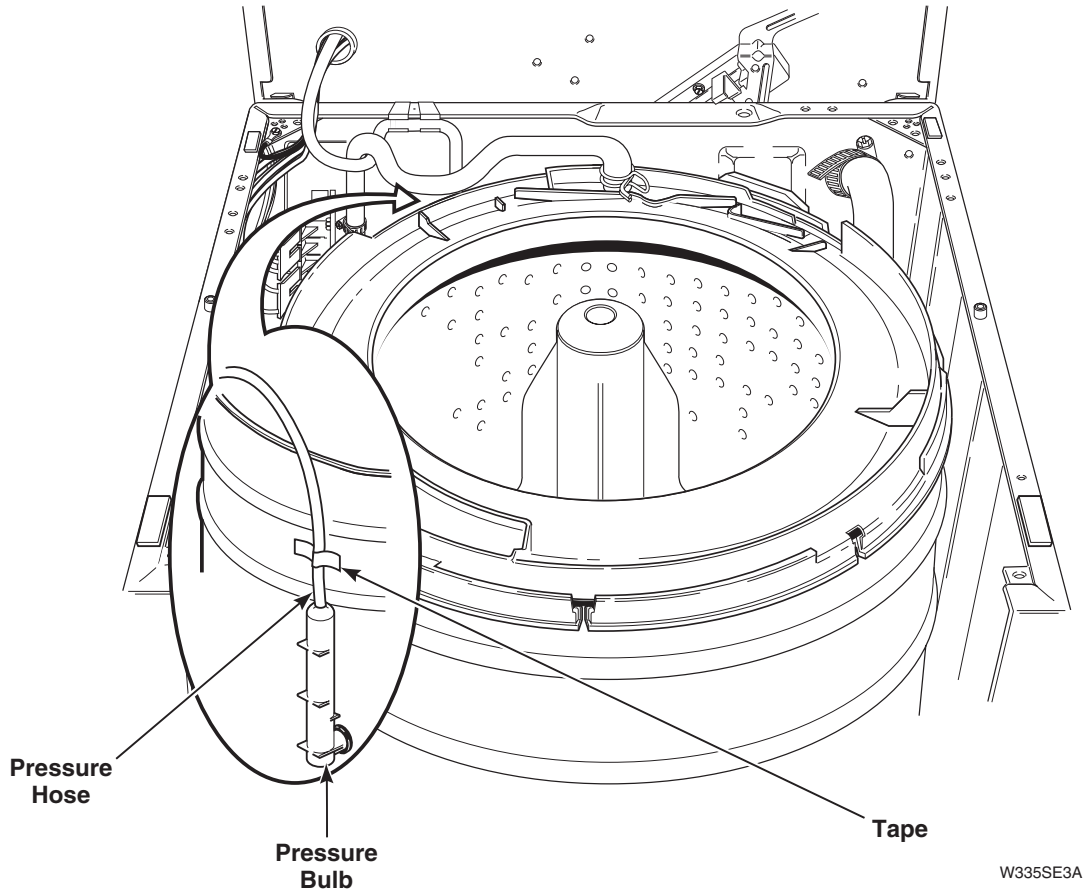

Figure 62

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Section 6
Adjustments

WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:
- **Disconnect electric power to the washer before servicing.**
- **Never start the washer with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.**

W003

58. LEVELING LEGS

Refer to *Figure 63*.

a. Place rubber feet on all four leveling legs.
b. Place washer in position on a clean, dry, and reasonably firm floor.
c. Loosen locknuts and adjust two front leveling legs. Once adjusted, tilt washer forward on front legs and lower back down into position to set rear self-leveling legs.
d. Washer must not rock. After washer is at desired height, tighten locknuts securely against bottom of washer base. If these locknuts are not tight, washer will not remain stationary during operation.
e. Install rear extension leg kit, No. 566P3, (optional equipment at extra cost) to raise height of washer.

NOTE: Washer should be installed on a reasonably firm floor. Flexing of a weak floor may cause excessive vibration. Vibration can also be caused if washer is installed on carpeting or a cushioned vinyl floor.

IMPORTANT: DO NOT move washer at any time unless locknuts are securely tightened and shipping brace is in place over agitator (to prevent damage to washer components). DO NOT slide washer across floor once leveling legs have been extended, as legs and washer base could become damaged.

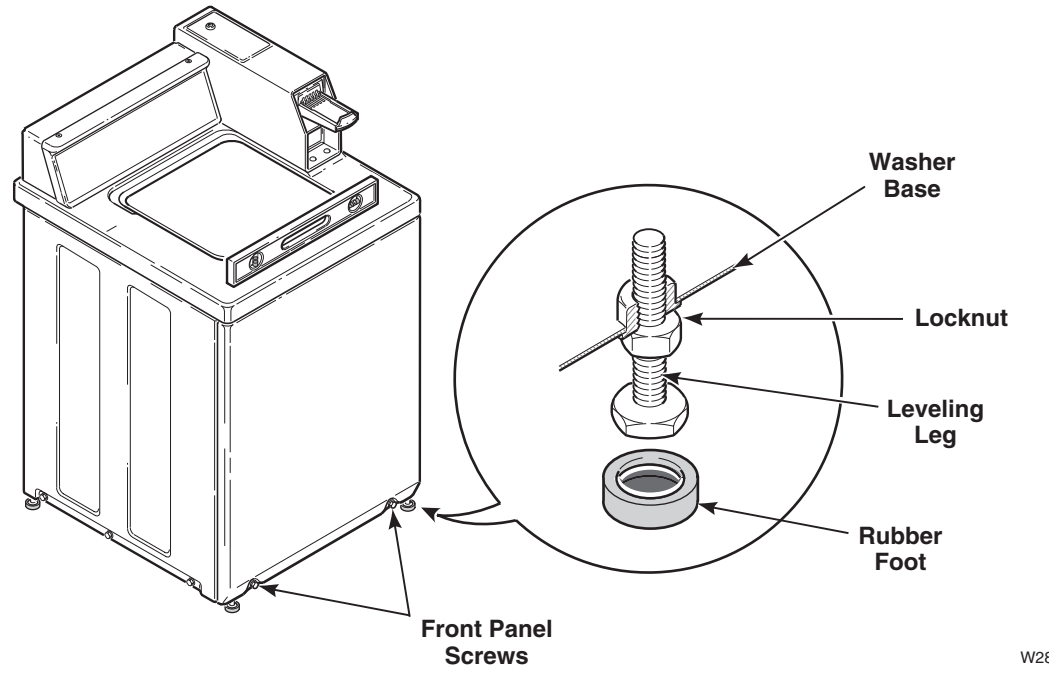

Figure 63

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WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:
- **Disconnect electric power to the washer before servicing.**
- **Never start the washer with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.**

W003

59. PRESSURE SWITCH

Refer to *Figure 64*.

NOTE: DO NOT ADJUST PRESSURE SWITCH IF WASHER IS WITHIN WARRANTY PERIOD.

Pressure switch is set at the factory for proper water fill levels. However, if there is a problem of overfilling or underfilling, pressure switch can be adjusted.

Maximum water fill level can be increased by turning adjusting screw CLOCKWISE, and decreased by turning screw COUNTERCLOCKWISE.

One quarter turn of adjusting screw represents approximately one inch (2.54 cm) increase or decrease of water level in washtub.

IMPORTANT: DO NOT turn adjusting screw more than 3/4 of a turn in either direction as switch may be damaged and flooding could result.

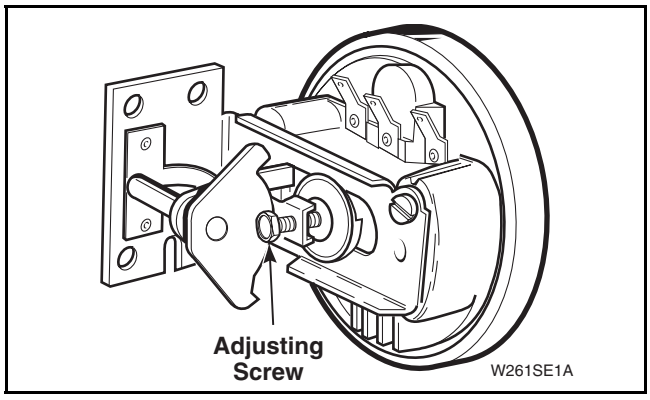

Figure 64

60. OUT-OF-BALANCE SWITCH

a. Raise cabinet top assembly. Refer to *Paragraph 43*.

b. Check for bent actuator arm or lever. Refer to *Figure 65*.

IMPORTANT: If switch lever repeatedly trips the out-of-balance switch, check centering of agitator within loading door opening. If tub module is not centered within opening, centering spring(s) may have been overstretched. Replace necessary spring(s) and recheck centering. Refer to *Figure 66*.

IMPORTANT: DO NOT APPLY ANY LUBRICANT to surface of snubber pad and isolator assembly or pivot dome. Any lubricant on pivot dome or isolator will cause premature tripping of out-of-balance switch.

61. BELT (AGITATE AND SPIN)

No belt adjustment is required.

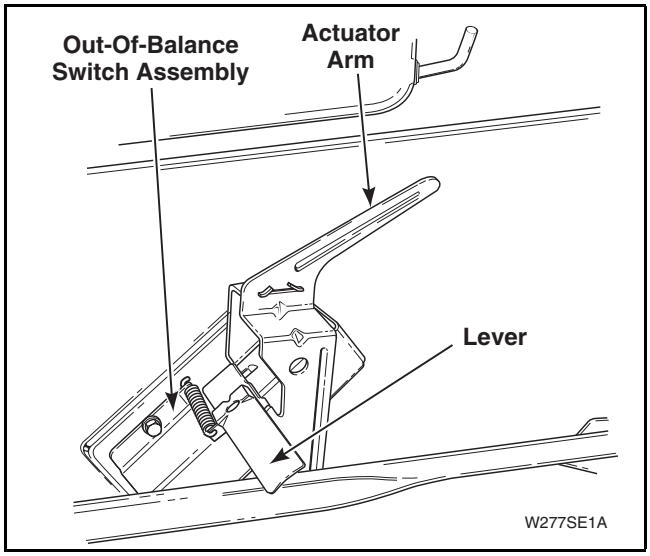

Figure 65

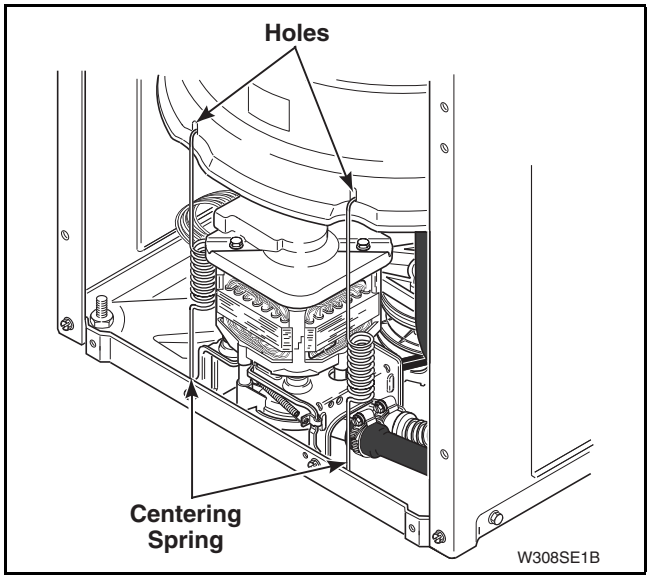

Figure 66

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WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:
- **Disconnect electric power to the washer before servicing.**
- **Never start the washer with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.**

W003

62. IDLER SPRING TENSION

The idler spring is hooked to a green clip at the right side of the drive motor bracket. The green tab should extend at a 90 degree right angle to the front of the machine. Refer to *Figure 67*.

If the green tab is at less than a 90 degree right angle the motor bracket is not adjusted properly. Refer to *Figure 68*.

To adjust, remove the idler spring and green clip from the motor bracket. Using a vise grip or channel locks, bend the lip of the motor bracket toward the rear of the washer until its angle is as shown in *Figure 67*.

Reinstall the green clip and check the angle of the tab.

Reinstall the idler spring.

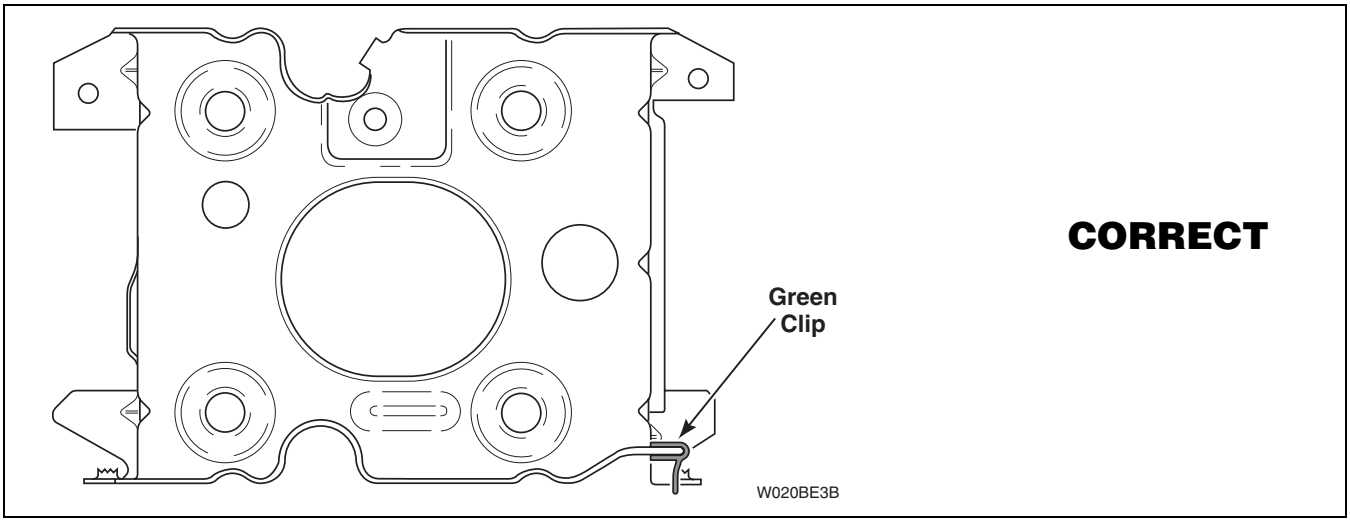

Figure 67

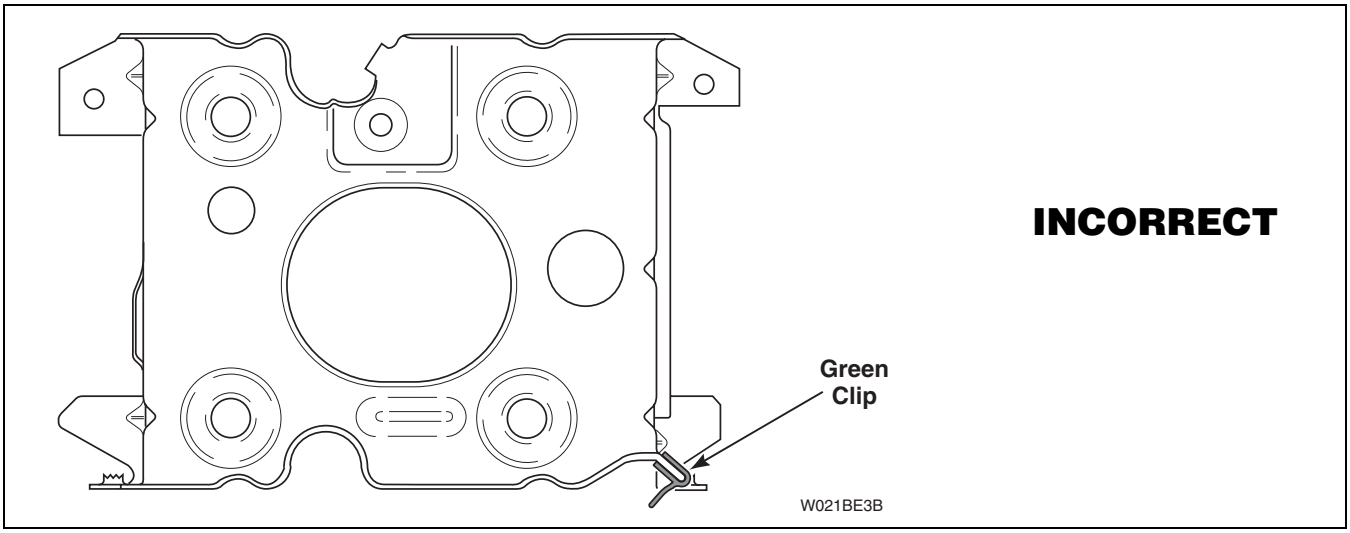

Figure 68

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WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:
- **Disconnect electric power to the washer before servicing.**
- **Never start the washer with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.**

W003

63. CLEANING COIN DROP

a. Disconnect electrical power to machine and drop.

b. Remove coin drop from machine. Refer to *Paragraph 34*.

c. If lint is preventing coins from rolling through coin drop, blow compressed air though coin entry and along the side of the coin drop. Refer to *Figure 69***.**

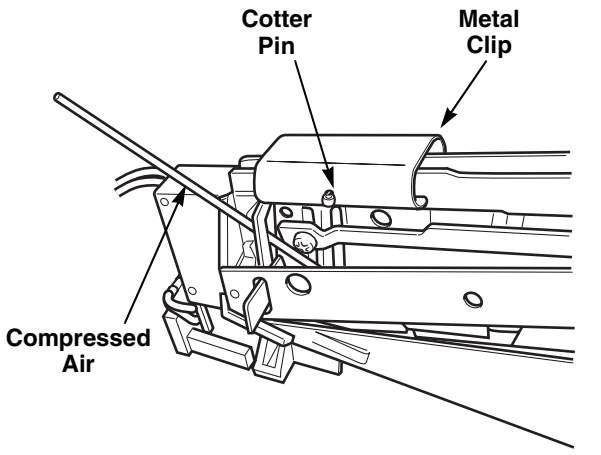

Figure 69

d. Insert a coin through the coin drop. If coin does not roll through drop, continue with the following.

e. Remove cotter pin from top of drop. Refer to *Figure 69***.** Save pin for reinstallation when cleaning is complete.

f. Move metal clip closer to sensor so that it comes off frame. Refer to *Figure 69***.**

g. Remove coin return from coin drop frame. Refer to *Figure 70***.**

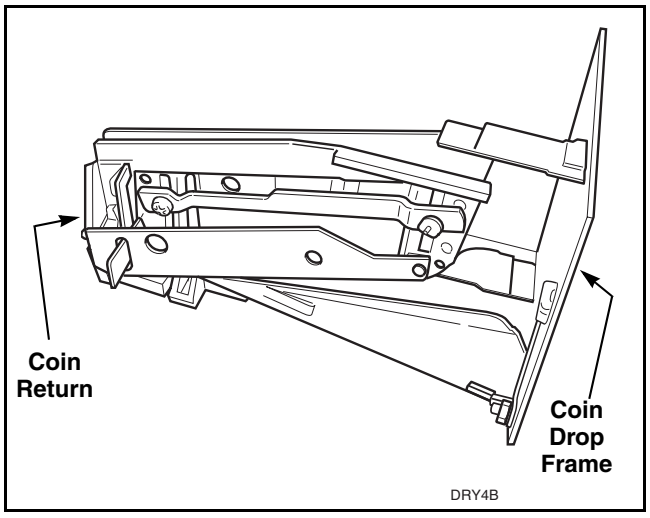

Figure 70

h. Check coin path in coin drop for lint and residue. If lint or light residues are present, use a cotton swab to remove. If heavy residue is present, it may be necessary to first scrape off excessive residue and then use a cotton swab dipped in water or isopropyl alcohol (rubbing alcohol) to remove remainder of residue. Refer to *Figure 71***.**

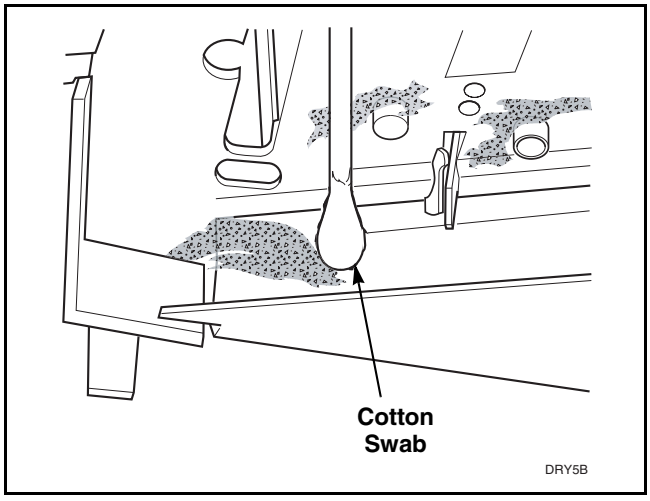

Figure 71

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WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:
- **Disconnect electric power to the washer before servicing.**
- **Never start the washer with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.**

W003

i. Check coin return pendulum to verify it swings freely. If pendulum does not swing freely, spray pendulum pivot point with Teflon based lubricant and move pendulum back and forth two to three times. An additional application of Teflon based lubricant may be necessary to ensure that pendulum swings freely. Refer to *Figure 72*.

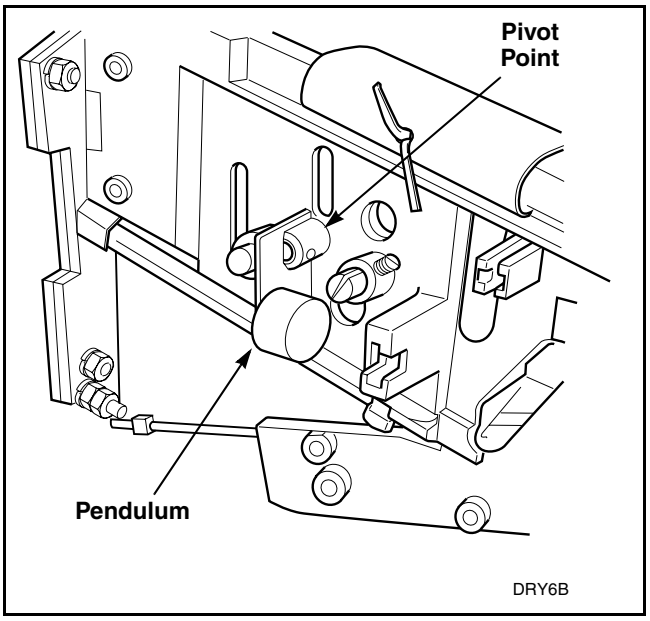

Figure 72

j. Check coin drop sensor for dust or dirt on eyes. Wipe eyes with dry cotton swab. Refer to *Figure 73*.

IMPORTANT: DO NOT use isopropyl alcohol to clean electronic sensor or eyes.

k. Reinstall coin return on to coin drop frame.
l. Reinstall metal clip and slide towards coin insert slot. All cotter pin holes must line up.
m. Reinstall cotter pin.
n. Place drop on level surface to verify that coins follow correct path in drop. It may be necessary to lift drop to allow coin to follow through sensor.
o. Reinstall coin drop into machine. Refer to *Figure 34*.

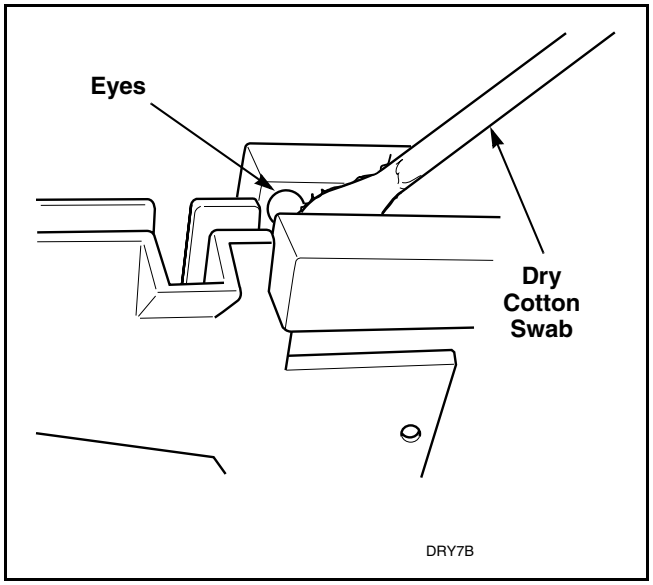

Figure 73

p. Reconnect electrical power to machine and drop.
q. Add a coin to drop to verify that coin drop is operating properly and that electrical connection is working properly.

NOTE: If coin drop does not operate properly after above steps have been completed, corrosion of metal or vandalized components within coin drop may be preventing the coin drop from functioning correctly. Replace coin drop.

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Notes

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Section 7
Test Procedures

WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:
- **Disconnect electric power to the washer before servicing.**
- **Never start the washer with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.**

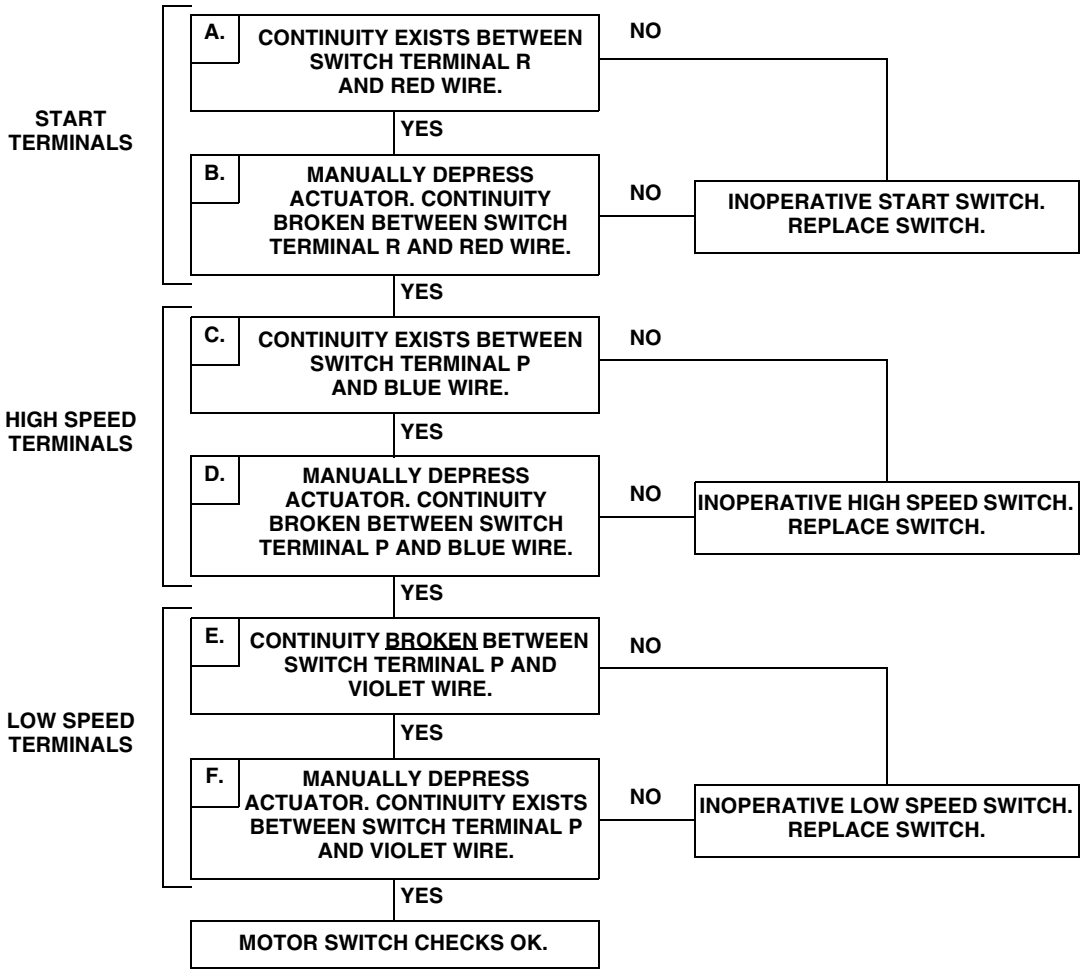
W003

64. EMERSON MOTOR SWITCH

NOTE: Refer to SECTION 9 for Internal Wiring of Washer Motor Switch.

WARNING

Disconnect electric power to washer before performing the following steps, or when replacing switch.


START TERMINALS
A. CONTINUITY EXISTS BETWEEN SWITCH TERMINAL R AND RED WIRE.
NO
YES
B. MANUALLY DEPRESS ACTUATOR. CONTINUITY BROKEN BETWEEN SWITCH TERMINAL R AND RED WIRE.
NO
INOPERATIVE START SWITCH. REPLACE SWITCH.
YES
HIGH SPEED TERMINALS
C. CONTINUITY EXISTS BETWEEN SWITCH TERMINAL P AND BLUE WIRE.
NO
YES
D. MANUALLY DEPRESS ACTUATOR. CONTINUITY BROKEN BETWEEN SWITCH TERMINAL P AND BLUE WIRE.
NO
INOPERATIVE HIGH SPEED SWITCH. REPLACE SWITCH.
YES
LOW SPEED TERMINALS
E. CONTINUITY BROKEN BETWEEN SWITCH TERMINAL P AND VIOLET WIRE.
NO
YES
F. MANUALLY DEPRESS ACTUATOR. CONTINUITY EXISTS BETWEEN SWITCH TERMINAL P AND VIOLET WIRE.
NO
INOPERATIVE LOW SPEED SWITCH. REPLACE SWITCH.
YES
MOTOR SWITCH CHECKS OK.

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WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:
- **Disconnect electric power to the washer before servicing.**
- **Never start the washer with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.**

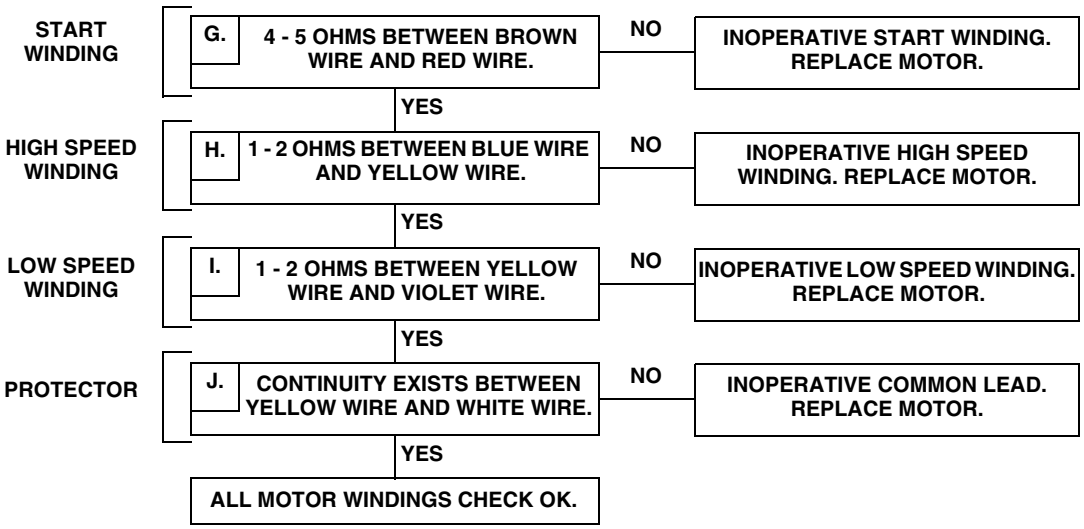
W003

65. EMERSON MOTOR WINDINGS

NOTE: Refer to SECTION 9 for Internal Wiring of Washer Motor Switch.

WARNING

Disconnect electric power to washer before performing the following steps, or when replacing motor.



INDICATE WHETHER <u>YES</u>, MOTOR PASSED THIS TEST OR, <u>NO</u> IT FAILED THIS TEST

☑ YES ☐ NO

Washer Motor Failure

Motor Switch

Start Terminals: ❑ A. ❑ B.

High Speed Terminals: ❑ C. ❑ D.

Low Speed Terminals: ❑ E. ❑ F.

Motor Windings

Start Winding: ❑ G.

High Speed Winding: ❑ H.

Low Speed Winding: ❑ I.

Protector/Common Lead: ❑ J.

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Section 8
Cycle Sequence Charts

FUNCTION		IN USE LIGHT	RINSE LIGHT	SPIN LIGHT	WATER TEMP.	CYCLE & * MOTOR SPEED	TIME (Min. & Sec.)
WASH	WASH, FILL OR AGITATE	X			H, W, C	N = FAST PP = FAST D = SLOW	10:33
PAUSE		X					:05
SPIN	SPIN	X		X		N = FAST PP = SLOW D = SLOW	1:56
	SPIN AND SPRAY	X		X	COLD	N = FAST PP = SLOW D = SLOW	:31
	SPIN	X		X		N = FAST PP = SLOW D = SLOW	:36
	SPIN AND SPRAY	X		X	COLD	N = FAST PP = SLOW D = SLOW	:07
	SPIN	X		X		N = FAST PP = SLOW D = SLOW	1:07
PAUSE		X					:04
RINSE	RINSE FILL (Timer Motor Runs)	X	X		COLD		:36
	PAUSE OR FILL	X	X		COLD		:02
	RINSE, AGITATE OR FILL	X	X		COLD	N = FAST PP = FAST D = SLOW	3:03
PAUSE		X					:06
SPIN	SPIN	X		X		N = FAST PP = FAST D = FAST	10:32
TIMER MOTOR RUNS OUT							:42
						TOTAL	30:00

KEY:

H = HOT
W = WARM
C = COLD
N = NORMAL CYCLE
PP = PERMANENT PRESS CYCLE
D = DELICATE CYCLE
X = INDICATOR LIGHT GLOWS

***ON SINGLE SPEED MODEL WASHERS, ALL SPEEDS ARE FAST.**

TIMER NO. 28716 CYCLE SEQUENCE (LONG CYCLE – KINGSTON)

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FUNCTION		IN USE LIGHT	RINSE LIGHT	SPIN LIGHT	WATER TEMP.	CYCLE & * MOTOR SPEED	EATON TIME (Min. & Sec.)	MALLORY TIME (Min. & Sec.)
WASH	Coin Slide Starting Stroke 17.82° (Mallory) 16.84° (Eaton)	X			H, W, C	N = FAST PP = FAST D = SLOW	:57	1:00
	AGITATE OR VARIABLE FILL	X			H, W, C	N = FAST PP = FAST D = SLOW	7:00	7:00
PAUSE		X					:21	:21
SPIN	SPIN	X				N = FAST PP = SLOW D = SLOW	1:25	1:25
	SPIN AND SPRAY	X			COLD	N = FAST PP = SLOW D = SLOW	:45	:45
	SPIN	X				N = FAST PP = SLOW D = SLOW	1:15	1:15
PAUSE		X					:04	:04
RINSE	FILL (Timer Motor Runs)	X			COLD		:13	:19
	PAUSE OR FILL	X	X		COLD		:13	:13
	AGITATE OR VARIABLE FILL	X	X		COLD	N = FAST PP = FAST D = SLOW	1:01	:54
		X					:09	:16
PAUSE		X					:14	:16
		X		X			:06	:03
SPIN	SPIN	X		X		N = FAST PP = FAST D = FAST	6:00	6:00
PAUSE		X		X			:04	:08
		X					:06	:03
OFF							:22	:19
						TOTAL	20:17	20:21

KEY:

H = HOT **PP = PERMANENT PRESS CYCLE**
W = WARM **D = DELICATE CYCLE**
C = COLD **X = INDICATOR LIGHT GLOWS**
N = NORMAL CYCLE

***ON SINGLE SPEED MODEL WASHERS, ALL SPEEDS ARE FAST.**

TIMER NO. 31111P CYCLE SEQUENCE (SHORT CYCLE)

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FUNCTION		IN USE LIGHT	RINSE LIGHT	SPIN LIGHT	WATER TEMP.	CYCLE & * MOTOR SPEED	TIME (Min. & Sec.)
WASH	Coin Slide Starting Stroke 16.84° (Eaton)	X			H, W, C	N = FAST PP = FAST D = SLOW	1:23
	AGITATE OR VARIABLE FILL	X			H, W, C	N = FAST PP = FAST D = SLOW	10:00
PAUSE		X					:34
SPIN	SPIN	X				N = FAST PP = SLOW D = SLOW	1:32
	SPIN AND SPRAY	X			COLD	N = FAST PP = SLOW D = SLOW	:30
	SPIN	X				N = FAST PP = SLOW D = SLOW	1:29
PAUSE		X					:06
RINSE	FILL (Timer Motor Runs)	X			COLD		:06
	PAUSE OR FILL	X	X		COLD		:20
	AGITATE OR VARIABLE FILL		X		COLD	N = FAST PP = FAST D = SLOW	3:19
		X					:23
PAUSE		X					:24
		X		X			:10
SPIN	SPIN	X		X		N = FAST PP = FAST D = FAST	8:30
PAUSE		X		X			:06
		X					:13
OFF							:32
						TOTAL	29:39

KEY:

H = HOT
W = WARM
C = COLD
N = NORMAL CYCLE
PP = PERMANENT PRESS CYCLE
D = DELICATE CYCLE
X = INDICATOR LIGHT GLOWS

***ON SINGLE SPEED MODEL WASHERS, ALL SPEEDS ARE FAST.**

TIMER NO. 34601P CYCLE SEQUENCE (LONG CYCLE)

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FUNCTION		IN USE LIGHT	RINSE LIGHT	SPIN LIGHT	WATER TEMP.	CYCLE & *MOTOR SPEED	EATON TIME (Min. & Sec.)	MALLORY TIME (Min. & Sec.)
WASH	Coin Slide Starting Stroke 17.82° (Mallory) 16.84° (Eaton)	X			H, W, C	N = FAST PP = FAST D = SLOW	1:23	1:31
	AGITATE OR VARIABLE FILL	X			H, W, C	N = FAST PP = FAST D = SLOW	10:00	10:00
PAUSE		X					:34	:34
SPIN	SPIN	X				N = FAST PP = SLOW D = SLOW	1:32	1:32
	SPIN AND SPRAY	X			COLD	N = FAST PP = SLOW D = SLOW	:30	:30
	SPIN	X				N = FAST PP = SLOW D = SLOW	1:29	1:30
PAUSE		X					:06	:06
RINSE	FILL (Timer Motor Runs)	X			COLD		:06	:34
	PAUSE OR FILL	X	X		COLD		:20	:20
	AGITATE OR VARIABLE FILL	X	X		COLD	N = FAST PP = FAST D = SLOW	3:19	3:20
		X					:24	:23
PAUSE		X					:24	:25
		X		X			:10	:11
SPIN	SPIN	X		X		N = FAST PP = FAST D = FAST	8:30	8:30
PAUSE		X		X			:06	:18
		X					:13	:05
OFF							:32	:28
						TOTAL	29:39	30:17

KEY:

H = HOT
W = WARM
C = COLD
N = NORMAL CYCLE
PP = PERMANENT PRESS CYCLE
D = DELICATE CYCLE
X = INDICATOR LIGHT GLOWS

***ON SINGLE SPEED MODEL WASHERS, ALL SPEEDS ARE FAST.**

TIMER NO. 34602 CYCLE SEQUENCE (LONG CYCLE)

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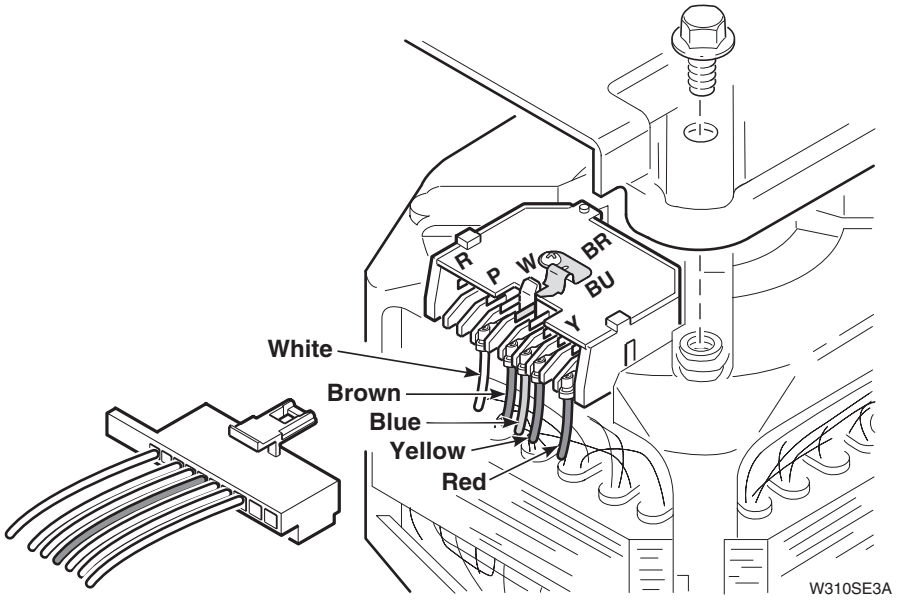
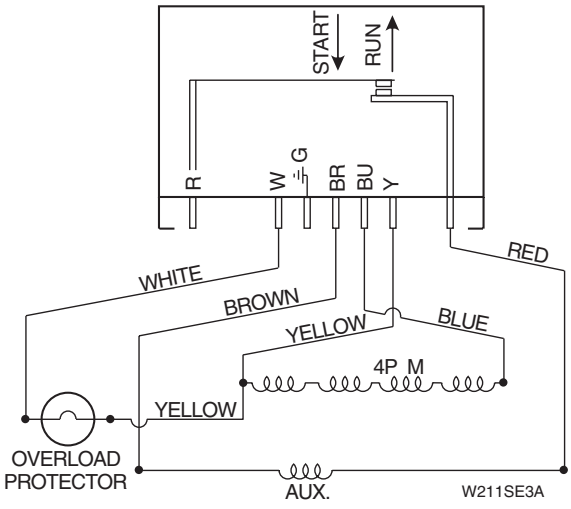
Section 9
Internal Wiring of Washer Motor Switch

WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:
- **Disconnect electric power to the washer before servicing.**
- **Never start the washer with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.**

W003





MOTOR ASSEMBLY
(1 SPEED MOTORS)

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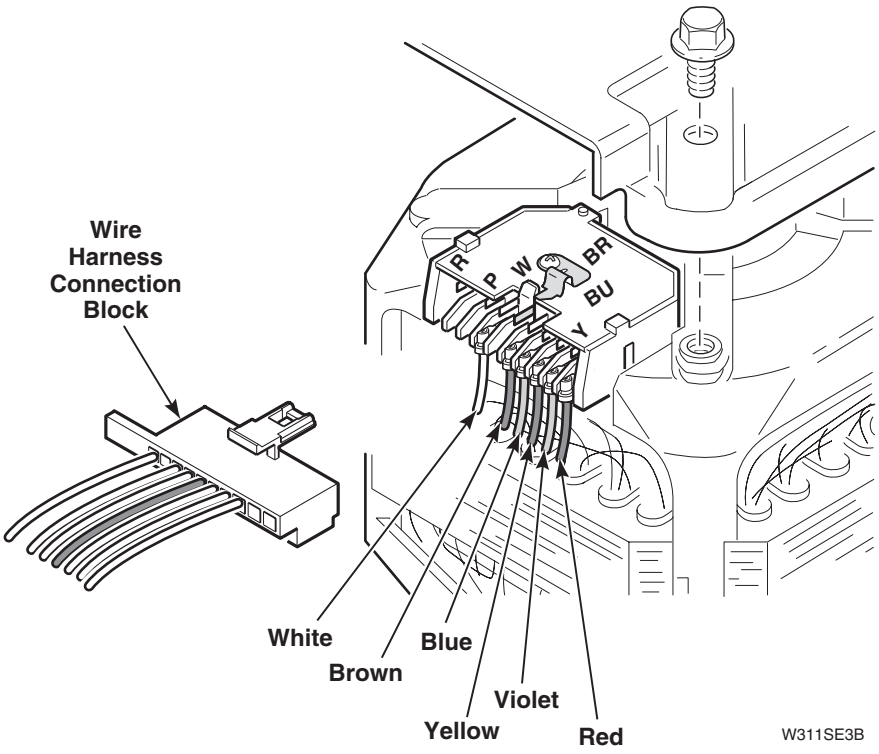
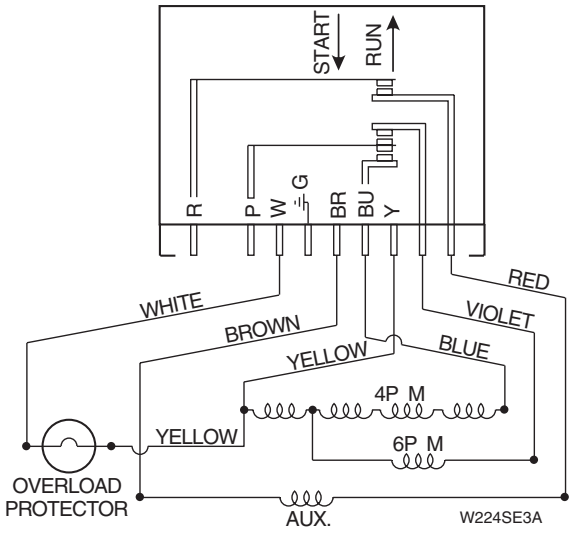
WARNING

To reduce the risk of electric shock, fire, explosion, serious injury or death:
- **Disconnect electric power to the washer before servicing.**
- **Never start the washer with any guards/panels removed.**
- **Whenever ground wires are removed during servicing, these ground wires must be reconnected to ensure that the washer is properly grounded.**

W003





MOTOR ASSEMBLY
(2 SPEED MOTORS)

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